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ThinkCentre
Hardware Maintenance Manual

Machine Types: 1654, 1664, 1665, 1677, 1738, 1739, 1741, 1761, 1762, 1763, 1782, 1837, 1938, 1942, 1962, and 1966.

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Note: Before using this information and the product it supports, be sure to read and understand the *ThinkCentre Safety and Warranty Guide* and Appendix A “Notices” on page 317.

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Chapter 1. About this manual

This manual contains service and reference information for ThinkCentre® computers listed on the cover. It is intended only for trained servicers who are familiar with Lenovo® computer products.

Before servicing a Lenovo product, be sure to read the Safety Information in Chapter 2 “Safety information” on page 3.

The Symptom-to-FRU Index and Additional Service Information chapters are not specific to any machine type and are applicable to all ThinkCentre computers.

This manual includes a complete FRU part number listing for each machine type and model listed on the cover. If you have Internet access, FRU part numbers are also available at:
http:/www.lenovo.com/support

Important Safety Information

Be sure to read all caution and danger statements in this book before performing any of the instructions.

Veuillez lire toutes les consignes de type DANGER et ATTENTION du présent document avant d'exécuter les instructions.

Lesen Sie unbedingt alle Hinweise vom Typ "ACHTUNG" oder "VORSICHT" in dieser Dokumentation, bevor Sie irgendwelche Vorgänge durchführen

Leggere le istruzioni introdotte da ATTENZIONE e PERICOLO presenti nel manuale prima di eseguire una qualsiasi delle istruzioni

Certifique-se de ler todas as instruções de cuidado e perigo neste manual antes de executar qualquer uma das instruções

Es importante que lea todas las declaraciones de precaución y de peligro de este manual antes de seguir las instrucciones.

تأكد من قراءة كل التحذيرات الموجودة في هذا الكتاب قبل اتباع هذه التعليمات .

执行任何说明之前，请确保已阅读本书中的所有警告和危险声明。

執行任何指示前，請確實閱讀本書中的所有警告及危險聲明。

ודאו שקראתם את כל הודעות האזהרה והסכנה במסמך זה לפני שתבצעו פעולה כלשהי.

본 사용 설명서에 기재된 내용을 실행하기 전에 모든 주의사항 및 위험사항을 숙지하십시오.

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Chapter 2. Safety information

This chapter contains the safety information that you need to be familiar with before servicing a computer.

General safety

Follow these rules to ensure general safety:

- Observe good housekeeping in the area of the machines during and after maintenance.
- When lifting any heavy object:
  1. Ensure you can stand safely without slipping.
  2. Distribute the weight of the object equally between your feet.
  3. Use a slow lifting force. Never move suddenly or twist when you attempt to lift.
  4. Lift by standing or by pushing up with your leg muscles; this action removes the strain from the muscles in your back.
     Do not attempt to lift any objects that weigh more than 16 kg (35 lb) or objects that you think are too heavy for you.
- Do not perform any action that causes hazards to the customer, or that makes the equipment unsafe.
- Before you start the machine, ensure that other service representatives and the customer's personnel are not in a hazardous position.
- Place removed covers and other parts in a safe place, away from all personnel, while you are servicing the machine.
- Keep your tool case away from walk areas so that other people will not trip over it.
- Do not wear loose clothing that can be trapped in the moving parts of a machine. Ensure that your sleeves are fastened or rolled up above your elbows. If your hair is long, fasten it.
- Insert the ends of your necktie or scarf inside clothing or fasten it with a nonconductive clip, approximately 8 centimeters (3 inches) from the end.
- Do not wear jewelry, chains, metal-frame eyeglasses, or metal fasteners for your clothing.
  Remember: Metal objects are good electrical conductors.
- Wear safety glasses when you are: hammering, drilling, soldering, cutting wire, attaching springs, using solvents, or working in any other conditions that might be hazardous to your eyes.
- After service, reinstall all safety shields, guards, labels, and ground wires. Replace any safety device that is worn or defective.
- Reinstall all covers correctly before returning the machine to the customer.

Electrical safety

CAUTION:
Electrical current from power, telephone, and communication cables can be hazardous. To avoid personal injury or equipment damage, disconnect the attached power cords, telecommunication systems, networks, and modems before you open the computer covers, unless instructed otherwise in the installation and configuration procedures.

Observe the following rules when working on electrical equipment.

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Important: Use only approved tools and test equipment. Some hand tools have handles covered with a soft material that does not insulate you when working with live electrical currents. Many customers have, near their equipment, rubber floor mats that contain small conductive fibers to decrease electrostatic discharges. Do not use this type of mat to protect yourself from electrical shock.

- Find the room emergency power-off (EPO) switch, disconnecting switch, or electrical outlet. If an electrical accident occurs, you can then operate the switch or unplug the power cord quickly.
- Do not work alone under hazardous conditions or near equipment that has hazardous voltages.
- Disconnect all power before:
  - Performing a mechanical inspection
  - Working near power supplies
  - Removing or installing Field Replaceable Units (FRUs)
- Before you start to work on the machine, unplug the power cord. If you cannot unplug it, ask the customer to power-off the wall box that supplies power to the machine and to lock the wall box in the off position.
- If you need to work on a machine that has exposed electrical circuits, observe the following precautions:
  - Ensure that another person, familiar with the power-off controls, is near you.
    Remember: Another person must be there to switch off the power, if necessary.
  - Use only one hand when working with powered-on electrical equipment; keep the other hand in your pocket or behind your back.
    Remember: There must be a complete circuit to cause electrical shock. By observing the above rule, you may prevent a current from passing through your body.
  - When using a tester, set the controls correctly and use the approved probe leads and accessories for that tester.
  - Stand on suitable rubber mats (obtained locally, if necessary) to insulate you from grounds such as metal floor strips and machine frames.

  Observe the special safety precautions when you work with very high voltages; these instructions are in the safety sections of maintenance information. Use extreme care when measuring high voltages.
- Regularly inspect and maintain your electrical hand tools for safe operational condition.
- Do not use worn or broken tools and testers.
- *Never assume* that power has been disconnected from a circuit. First, *check* that it has been powered-off.
- Always look carefully for possible hazards in your work area. Examples of these hazards are moist floors, nongrounded power extension cables, power surges, and missing safety grounds.
- Do not touch live electrical circuits with the reflective surface of a plastic dental mirror. The surface is conductive; such touching can cause personal injury and machine damage.
- Do not service the following parts with the power on when they are removed from their normal operating places in a machine:
  - Power supply units
  - Pumps
  - Blowers and fans
  - Motor generators

  and similar units. (This practice ensures correct grounding of the units.)
- If an electrical accident occurs:
  - Use caution; do not become a victim yourself.
  - Switch off power.
  - Send another person to get medical aid.

Safety inspection guide

The intent of this inspection guide is to assist you in identifying potentially unsafe conditions on these products. Each machine, as it was designed and built, had required safety items installed to protect users and service personnel from injury. This guide addresses only those items. However, good judgment should be used to identify potential safety hazards due to attachment of features or options not covered by this inspection guide.

If any unsafe conditions are present, you must determine how serious the apparent hazard could be and whether you can continue without first correcting the problem.

Consider these conditions and the safety hazards they present:

- Electrical hazards, especially primary power (primary voltage on the frame can cause serious or fatal electrical shock).
- Explosive hazards, such as a damaged CRT face or bulging capacitor
- Mechanical hazards, such as loose or missing hardware

The guide consists of a series of steps presented in a checklist. Begin the checks with the power off, and the power cord disconnected.

Checklist:

1. Check exterior covers for damage (loose, broken, or sharp edges).
2. Power-off the computer. Disconnect the power cord.
3. Check the power cord for:
   a. A third-wire ground connector in good condition. Use a meter to measure third-wire ground continuity for 0.1 ohm or less between the external ground pin and frame ground.
   b. The power cord should be the appropriate type as specified in the parts listings.
   c. Insulation must not be frayed or worn.
4. Remove the cover.
5. Check for any obvious alterations. Use good judgment as to the safety of any alterations.
6. Check inside the unit for any obvious unsafe conditions, such as metal filings, contamination, water or other liquids, or signs of fire or smoke damage.
7. Check for worn, frayed, or pinched cables.
8. Check that the power-supply cover fasteners (screws or rivets) have not been removed or tampered with.

Handling electrostatic discharge-sensitive devices

Any computer part containing transistors or integrated circuits (ICs) should be considered sensitive to electrostatic discharge (ESD). ESD damage can occur when there is a difference in charge between objects. Protect against ESD damage by equalizing the charge so that the machine, the part, the work mat, and the person handling the part are all at the same charge.

Notes:

1. Use product-specific ESD procedures when they exceed the requirements noted here.
2. Make sure that the ESD protective devices you use have been certified (ISO 9000) as fully effective.

When handling ESD-sensitive parts:

- Keep the parts in protective packages until they are inserted into the product.
- Avoid contact with other people while handling the part.

- Wear a grounded wrist strap against your skin to eliminate static on your body.
- Prevent the part from touching your clothing. Most clothing is insulative and retains a charge even when you are wearing a wrist strap.
- Use the black side of a grounded work mat to provide a static-free work surface. The mat is especially useful when handling ESD-sensitive devices.
- Select a grounding system, such as those listed below, to provide protection that meets the specific service requirement.

  Note: The use of a grounding system is desirable but not required to protect against ESD damage.

  – Attach the ESD ground clip to any frame ground, ground braid, or green-wire ground.
  – Use an ESD common ground or reference point when working on a double-insulated or battery-operated system. You can use coax or connector-outside shells on these systems.
  – Use the round ground-prong of the ac plug on ac-operated computers.

Grounding requirements

Electrical grounding of the computer is required for operator safety and correct system function. Proper grounding of the electrical outlet can be verified by a certified electrician.

Safety notices (multi-lingual translations)

The caution and danger safety notices in this section are provided in the following languages:

- English
- Arabic
- Brazilian/Portuguese
- Chinese (simplified)
- Chinese (traditional)
- French
- German
- Hebrew
- Italian
- Korean
- Spanish

DANGER

Electrical current from power, telephone and communication cables is hazardous.

To avoid a shock hazard:

- **Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.**
- **Connect all power cords to a properly wired and grounded electrical outlet.**
- **Connect to properly wired outlets any equipment that will be attached to this product.**

- **When possible, use one hand only to connect or disconnect signal cables.**
- **Never turn on any equipment when there is evidence of fire, water, or structural damage.**
- **Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.**
- **Connect and disconnect cables as described in the following tables when installing, moving, or opening covers on this product or attached devices.**

To Connect	To Disconnect
1. Turn everything OFF. 2. First, attach all cables to devices. 3. Attach signal cables to connectors. 4. Attach power cords to outlet. 5. Turn device ON.	1. Turn everything OFF. 2. First, remove power cords from outlet. 3. Remove signal cables from connectors. 4. Remove all cables from devices.

CAUTION:
When replacing the lithium battery, use only Part Number 45C1566 or an equivalent type battery recommended by the manufacturer. If your system has a module containing a lithium battery, replace it only with the same module type made by the same manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of. *Do not:*

- **Throw or immerse into water**
- **Heat to more than 100°C (212°F)**
- **Repair or disassemble**

Dispose of the battery as required by local ordinances or regulations.

CAUTION:
When laser products (such as CD-ROMs, DVD-ROM drives, fiber optic devices, or transmitters) are installed, note the following:

- **Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.**
- **Use of controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.**

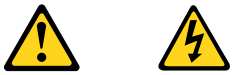
DANGER

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following:

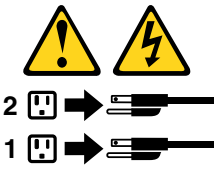
Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.

≥18 kg (37 lbs) ≥32 kg (70.5 lbs) ≥55 kg (121.2 lbs)

CAUTION:
Use safe practices when lifting.



CAUTION:
The power control button on the device and the power switch on the power supply do not turn off the electrical current supplied to the device. The device also might have more than one power cord. To remove all electrical current from the device, ensure that all power cords are disconnected from the power source.



خـــطر

التيـار الكـهربـي المـوجـود بمصـدر الطـاقـة أو أجـهزة التليفـون أو أسـلاك الإتـصالات يشـكل خـطورة.

لـتفادي مخـاطـر الصـدمـات الكـهربـائـية:

لا تحاول توصيل أو فصل أي أسـلاك أو القـيام بعـمليـات تـركيب أو صـيانـة أوإعـادة توصـيف لـهذا المنتج أثـناء وجـود عاصـفة كـهربـائـية.

يجـب تـوصـيل كـل أسـلاك الكـهربـاء فـي مخـارج كـهربـاء ذات تـوصـيلات أسـلاك وتـوصـيلات أرضـية صحيحة
يجـب تـوصـيل أي جـهاز سـيتم الحـاقه بـهذا المـنتج فـي مخارج كـهربـاء ذات تـوصـيلات أسـلاك صحيحة.

وإن أمـكن يـجب اسـتخدام يـد واحـدة فـقط فـي تـوصـيل أو فصـل أسلاك الإشـارة.

لا تحـاول تشغـيل أي جـهاز إذا كـان هنـاك أثـر لحـرق أو مـياه أو تـلف بالمكـونـات
يجـب فصـل أسـلاك الكـهربـاء وأنـظمة الاتصـالات وشـبكات الاتصـال وأجـهزة المـودم الملحـقة قـبل فـتح أغطية الجهاز، مـالـم يـتم طـلب خـلاف ذلك فـي التـعليـمات الخـاصة بالتـركيب والتـوصـيف.
قم بتوصيل وفصل الأسلاك كما هو موضح في الجدول التالي وذلك عند القيام بعمليات التركيب أو النقل أو فتح أغطية هذا المنتج أو الأجهزة الملحقة.

للتوصيل:	للفصل:
قم بإيقاف كل شيء.	قم بإيقاف كل شيء.
أولا، قم بتوصيل كل الأسلاك بالأجهزة.	أولا، قم بفصل كل أسلاك الكهرباء من المخرج.
قم بتوصيل أسلاك الإشارة في لموصلات.	قم بفصل أسلاك الإشارة من الموصلات.
قم بتوصيل أسلاك الكهرباء في المخارج.	قم بفصل كل الأسلاك من الأجهزة.
قم بتشغيل الجهاز.	

تنبيـــه :
عند استبدال البطارية الليثيوم، استخدم فقط رقم الجزء الخاص Part Number 45C1566 أو نوع أخر يكون على نفس مستوى الكفاءة يحدده لك المصنع.
اذا كان النظام الخاص يستخدم معه بطارية ليثيوم قم باستبدالها بنفس النوع الذي تم صناعته من خلال نفس المصنع. تحتوي البطارية على مادة الليثيوم ويمكن أن تنفجرفي حالة عدم استخدامها أو التعامل معها بطريقة صحيحة أو عند التخلص منها بطريقة خطأ.

لا تقم بـــ:
- **القاء البطارية أو غمرها في الماء**
- **تسخينها أعلى من ١٠٠ درجة مئوية°و(٢١٢ ° فهرنهيت)**
- **بتصليحها أو فكها**

تخلص من البطارية طبقا للقانون أو النظام المحلي .

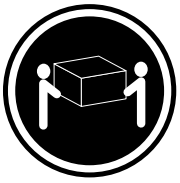
تنبيـــه :
أثناء تركيب منتجات ليزر (مثل CD-ROMsأو وحدة تشغيل DVDأو أجهزة Fiber Optic أو وحدات الارسال) يجب مراعاة الآتي:

لا تنزع الأغطية. قد ينتج عن نزع أغطية منتج الليزر انفجار أشعة الليزر شديدة الخطورة.
لا يوجد أجزاء يمكن تغييرها داخل الجهاز. قد ينتج عن استخدام تحكمات أو تعديلات أو عمل أي تصرفات أخرى تخالف ما هو محددا هنا الى انفجار أشعة شديدة الخطورة.

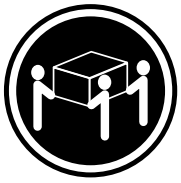
خطـــر

تحتوى بعض منتجات الليزر على الفئة دايود ليزر مدمج من الفئة Class 3Aأو Class 3B. يجب مراعاة الآتي .

أشعة الليزر عند الفتح. لا تحدق الى الاشعاع و لا تنظر اليه مباشرة بواسطة أي أجهزة مرئية وتجنب التعرض المباشر للاشعاع .



≥18 kg (37 lbs)

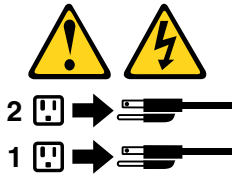


≥32 kg (70.5 lbs)

≥55 kg (121.2 lbs)

تنبيه :
يجب استخدام ممارسات آمنة عند الرفع

تنبيـــه :
لا يقم زر التحكم في التشغيل الموجود على الجهاز والمفتاح الكهربائي الموجود على لوحة التحكم بايقاف التيار الكهربائي المار بالجهاز. قد يكون للجهاز أكثر من سلك كهربائي واحد.
لايقاف التيار الكهربائي المار بالجهاز، تأكد من فصل جميع أسلاك الكهرباء من مصدر الكهرباء .



PERIGO

A corrente elétrica proveniente de cabos de alimentação, de telefone e de comunicações é perigosa.

Para evitar risco de choque elétrico:

- Não conecte nem desconecte nenhum cabo ou execute instalação, manutenção ou reconfiguração deste produto durante uma tempestade com raios.
- Conecte todos os cabos de alimentação a tomadas elétricas corretamente instaladas e aterradas.
- Todo equipamento que for conectado a este produto deve ser conectado a tomadas corretamente instaladas.
- Quando possível, utilize apenas uma das mãos para conectar ou desconectar cabos de sinal.
- Nunca ligue nenhum equipamento quando houver evidência de fogo, água ou danos estruturais.
- Antes de abrir tampas de dispositivos, desconecte cabos de alimentação, sistemas de telecomunicação, redes e modems conectados, a menos que especificado de maneira diferente nos procedimentos de instalação e configuração.
- Conecte e desconecte os cabos conforme descrito na tabela apresentada a seguir ao instalar, mover ou abrir tampas deste produto ou de dispositivos conectados.

Para Conectar:	**Para Desconectar:**
1. DESLIGUE Tudo. 2. Primeiramente, conecte todos os cabos aos dispositivos. 3. Conecte os cabos de sinal aos conectores. 4. Conecte os cabos de alimentação às tomadas. 5. LIGUE os dispositivos.	1. DESLIGUE Tudo. 2. Primeiramente, remova os cabos de alimentação das tomadas. 3. Remova os cabos de sinal dos conectores. 4. Remova todos os cabos dos dispositivos.

CUIDADO:

Ao substituir a bateria de lítio, utilize apenas uma bateria com Número de Peça 45C1566 ou um tipo de bateria equivalente recomendado pelo Se o seu sistema possui um módulo com uma bateria de lítio, substitua-o apenas por um módulo do mesmo tipo e do mesmo fabricante. A bateria contém lítio e pode explodir se não for utilizada, manuseada ou descartada de maneira correta.

Não:

- Jogue ou coloque na água
- Aqueça a mais de 100°C (212°F)
- Conserte nem desmonte

Descarte a bateria conforme requerido pelas leis ou regulamentos locais.

PRECAUCIÓN:

Quando produtos a laser (como unidades de CD-ROMs, unidades de DVD-ROM, dispositivos de fibra ótica ou transmissores) estiverem instalados, observe o seguinte:

- Não remova as tampas. A remoção das tampas de um produto a laser pode resultar em exposição prejudicial à radiação de laser. Não existem peças que podem ser consertadas no interior do dispositivo.
- A utilização de controles ou ajustes ou a execução de procedimentos diferentes dos especificados aqui pode resultar em exposição prejudicial à radiação.

PERIGO

Alguns produtos a laser contêm diodo de laser integrado da Classe 3A ou da Classe 3B. Observe o seguinte:

Radiação a laser quando aberto. Não olhe diretamente para o feixe a olho nu ou com instrumentos ópticos e evite exposição direta ao feixe.

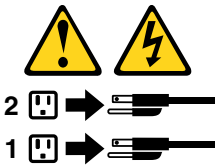
≥18 kg (37 lbs) ≥32 kg (70.5 lbs) ≥55 kg (121.2 lbs)

CUIDADO:

Utilize procedimentos de segurança para levantar equipamentos.

CUIDADO:

O botão de controle de alimentação do dispositivo e o botão para ligar/desligar da fonte de alimentação não desligam a corrente elétrica fornecida ao dispositivo. O dispositivo também pode ter mais de um cabo de alimentação. Para remover toda a corrente elétrica do dispositivo, assegure que todos os cabos de alimentação estejam desconectados da fonte de alimentação.



危险

电源、电话和通信电缆中的电流是危险的。

为避免电击危险：

- 请勿在雷电期间连接或断开任何电缆的连接，或者对本产品进行安装、维护或重新配置。
- 将所有电源线连接到正确连线和妥善接地的电源插座。
- 将所有要连接到该产品的设备连接到正确连线的插座。
- 如果可能，请仅使用一只手来连接或断开信号电缆的连接。
- 切勿在有火、水、结构损坏迹象的情况下开启任何设备。
- 在打开设备外盖之前请断开已连接的电源线、远程通信系统、网络和调制解调器，除非在安装和配置过程中另有说明。
- 当安装、移动或打开该产品或连接设备的外盖时，请按照下表所述来连接或断开电缆的连接。

要连接	要断开连接
1. 切断所有电源。 2. 首先将所有电缆连接到设备。 3. 将信号电缆连接到接口。 4. 将电源线连接到插座。 5. 开启设备。	1. 切断所有电源。 2. 首先从插座上拔出电源线。 3. 从接口上拔出信号电缆。 4. 从设备上拔出所有电缆。

警告：
更换锂电池时，请仅使用部件号为 45C1566 的电池或制造商推荐的同类电池。如果您的系统有包含锂电池的模块，请仅使用同一制造商生产的相同模块类型来替换该模块。该电池中含有锂，如果使用、操作或处理不当，可能会发生爆炸。

切勿：

- 投入或浸入水中
- 加热到 100℃（212℉）以上
- 维修或拆卸

请按照当地法令或条例的要求处理电池。

警告：
安装激光产品（例如 CD-ROM、DVD-ROM 驱动器、光纤设备或发射设备）时，请注意以下声明：

- 请勿卸下外盖。卸下激光产品的外盖可能导致遭受激光辐射的危险。该设备内没有可维修的部件。
- 如果不按照此处指定的过程进行控制、调整或操作，则有可能导致遭受辐射的危险。

危险

某些激光产品包含嵌入式 3A 类或 3B 类激光二极管。请注意以下声明：

打开后有激光辐射。请勿注视光束，请勿直接用光学仪器查看，并请避免直接暴露在光束中。

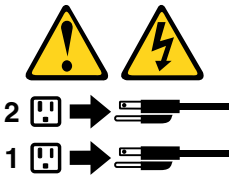
≥18 千克（37 磅）

≥32 千克（70.5 磅）

≥55 千克（121.2 磅）

警告：
抬起时请采取安全措施。

警告：
设备上的电源控制按钮和电源上的电源开关不会切断供给该设备的电流。该设备还可能有多条电源线。要切断该设备的所有电流，请确保所有电源线都与电源断开连接。



危險

電源、電話及通訊纜線上的電流都具有危險性。
若要避免觸電危險：
- 請勿在雷雨期間，連接或拔除纜線、執行安裝、維護或重新配置本產品。
- 將所有電源線連接到正確配線及接地的電源插座。
- 任何與本產品連接的設備都必須連接到配線妥當的電源插座。
- 請盡可能用單手連接或拔除信號線。
- 發生火災、水災或結構損害時，絕對不要開啟任何設備。
- 除非在安裝及配置程序中另有指示，否則在開啟裝置機蓋之前，請拔掉連接的電源線、電信系統、網路及數據機。
- 安裝、移動或開啟本產品或附屬裝置的機蓋時，請遵循下列說明連接及拔掉纜線。

連線	切斷連線
1. 關閉所有開關。 2. 首先，連接所有接線到裝置。 3. 連接信號線到接頭。 4. 連接電源線到插座。 5. 開啟裝置。	1. 關閉所有開關。 2. 首先，拔掉插座上的電源線。 3. 拔掉接頭上的信號線。 4. 拔掉裝置上所有接線。

警告：
更換鋰電池時，請僅使用產品編號 **45C1566** 或製造商所建議的同類型電池。
如果您的系統中含有鋰電池模組，請僅使用同一家製造商所生產的相同模組進行更換。
如果未以正確方式使用、處理或棄置含鋰的電池，會有爆炸的危險。
請勿：

- 沾溼或浸入水中
- 置於 **100°C (212°F)** 以上的高溫環境
- 修理或拆開

請按照各地區有關廢棄電池的法令和規定處理舊電池。

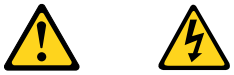
警告：
- 請勿移除機蓋。移除雷射產品的機蓋，可能會導致暴露在危險的雷射輻射中。裝置內部並無可自行維修的零件。
- 利用或執行非本文中所指定的控制、調整及執行程序，可能會導致危險的輻射外洩。

危險

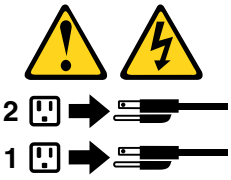
部分雷射產品含有內嵌式 **Class 3A** 或 **Class 3B** 雷射二極體。請注意下列事項：
在開啟光碟機時，會發生雷射輻射。請勿直視光束或用光學儀器直接檢視，並避免直接暴露在光束中。

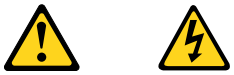
≥ 18 公斤（37 磅） ≥ 32 公斤（70.5 磅） ≥ 55 公斤（121.2 磅）

警告：
搬運時請注意安全。



警告：
裝置上的電源控制按鈕及電源供應器上的電源開關，無法關閉裝置所產生的電流。
該裝置可能有多條電源線。若要除去裝置流出的所有電流，請確認已切斷所有電源線的電源。





DANGER

Le courant électrique provenant de l'alimentation, du téléphone et des câbles de transmission peut présenter un danger.

Pour éviter tout risque de choc électrique :

- Ne manipulez aucun câble et n'effectuez aucune opération d'installation, d'entretien ou de reconfiguration de ce produit au cours d'un orage.
- Branchez tous les cordons d'alimentation sur un socle de prise de courant correctement câblé et mis à la terre.
- Branchez sur des socles de prise de courant correctement câblés tout équipement connecté à ce produit.
- Lorsque cela est possible, n'utilisez qu'une seule main pour connecter ou déconnecter les câbles d'interface.
- Ne mettez jamais un équipement sous tension en cas d'incendie ou d'inondation, ou en présence de dommages matériels.
- Avant de retirer les carters de l'unité, mettez celle-ci hors tension et déconnectez ses cordons d'alimentation, ainsi que les câbles qui la relient aux réseaux, aux systèmes de télécommunication et aux modems (sauf instruction contraire mentionnée dans les procédures d'installation et de configuration).
- Lorsque vous installez, que vous déplacez, ou que vous manipulez le présent produit ou des périphériques qui lui sont raccordés, reportez-vous aux instructions ci-dessous pour connecter et déconnecter les différents cordons.

Connexion	Déconnexion
1. Mettez les unités HORS TENSION. 2. Commencez par brancher tous les cordons sur les unités. 3. Branchez les câbles d'interface sur des connecteurs. 4. Branchez les cordons d'alimentation sur des prises. 5. Mettez les unités SOUS TENSION.	1. Mettez les unités HORS TENSION. 2. Débranchez les cordons d'alimentation des prises. 3. Débranchez les câbles d'interface des connecteurs. 4. Débranchez tous les câbles des unités.

ATTENTION:

Remplacer la pile au lithium usagée par une pile de référence identique exclusivement, (référence 45C1566), ou suivre les instructions du fabricant qui en définit les équivalences. Si votre système est doté d'un module contenant une pile au lithium, vous devez le remplacer uniquement par un module identique, produit par le même fabricant. La pile contient du lithium et peut exploser en cas de mauvaise utilisation, de mauvaise manipulation ou de mise au rebut inappropriée.

Ne pas :

- **la jeter à l'eau,**
- **l'exposer à des températures supérieures à 100°C,**
- **chercher à la réparer ou à la démonter.**

Ne pas mettre la pile à la poubelle. Pour la mise au rebut, se reporter à la réglementation en vigueur.

ATTENTION:

Si des produits à laser (tels que des unités de CD-ROM, de DVD-ROM, des unités à fibres optiques, ou des émetteurs) sont installés, prenez connaissance des informations suivantes :

- **Ne retirez pas le carter. En ouvrant l'unité de CD-ROM ou de DVD-ROM, vous vous exposez au rayonnement dangereux du laser. Aucune pièce de l'unité n'est réparable.**
- **Pour éviter tout risque d'exposition au rayon laser, respectez les consignes de réglage et d'utilisation des commandes, ainsi que les procédures décrites dans le présent manuel.**

DANGER

Certains produits à laser contiennent une diode à laser intégrée de classe 3A ou 3B. Prenez connaissance des informations suivantes:

Rayonnement laser lorsque le carter est ouvert. Evitez toute expositiondirecte au rayon laser. Evitez de regarder fixement le faisceau ou del'observer à l'aide d'instruments optiques.

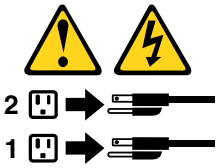
≥18 kg (37 lbs) ≥32 kg (70.5 lbs) ≥55 kg (121.2 lbs)

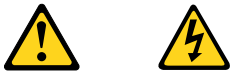
ATTENTION:

Soulevez la machine avec précaution.

ATTENTION:

L'interrupteur de contrôle d'alimentation de l'unité et l'interrupteur dubloc d'alimentation ne coupent pas le courant électrique alimentantl'unité. En outre, le système peut être équipé de plusieurs cordonsd'alimentation. Pour mettre l'unité hors tension, vous devez déconnectertous les cordons de la source d'alimentation.





VORSICHT

An Netz-, Telefon- und Datenleitungen können gefährliche Spannungen anliegen.

Aus Sicherheitsgründen:

- **Bei Gewitter an diesem Gerät keine Kabel anschließen oder lösen. Ferner keine Installations-, Wartungs- oder Rekonfigurationsarbeiten durchführen.**
- **Gerät nur an eine Schutzkontaktsteckdose mit ordnungsgemäß geerdetem Schutzkontakt anschließen.**
- **Alle angeschlossenen Geräte ebenfalls an Schutzkontaktsteckdosen mit ordnungsgemäß geerdetem Schutzkontakt anschließen.**
- **Die Signalkabel nach Möglichkeit einhändig anschließen oder lösen, um einen Stromschlag durch Berühren von Oberflächen mit unterschiedlichem elektrischem Potenzial zu vermeiden.**
- **Geräte niemals einschalten, wenn Hinweise auf Feuer, Wasser oder Gebäudeschäden vorliegen.**

- **Die Verbindung zu den angeschlossenen Netzkabeln, Telekommunikationssystemen, Netzwerken und Modems ist vor dem Öffnen des Gehäuses zu unterbrechen, sofern in den Installations- und Konfigurationsprozeduren keine anders lautenden Anweisungen enthalten sind.**
- **Zum Installieren, Transportieren und Öffnen der Abdeckungen des Computers oder der angeschlossenen Einheiten die Kabel gemäß der folgenden Tabelle anschließen und abziehen.**

Zum Anschließen der Kabel gehen Sie wie folgt vor	Zum Abziehen der Kabel gehen Sie wie folgt vor
1. Schalten Sie alle Einheiten AUS. 2. Schließen Sie erst alle Kabel an die Einheiten an. 3. Schließen Sie die Signalkabel an die Buchsen an. 4. Schließen Sie die Netzkabel an die Steckdose an. 5. Schalten Sie die Einheit EIN.	1. Schalten Sie alle Einheiten AUS. 2. Ziehen Sie zuerst alle Netzkabel aus den Netzsteckdosen. 3. Ziehen Sie die Signalkabel aus den Buchsen. 4. Ziehen Sie alle Kabel von den Einheiten ab.

CAUTION:

Eine verbrauchte Lithiumbatterie nur durch eine Batterie mit der Teilenummer 45C1566 oder eine gleichwertige, vom Hersteller empfohlene Batterie ersetzen. Enthält das System ein Modul mit einer Lithiumbatterie, dieses nur durch ein Modul desselben Typs und von demselben Hersteller ersetzen. Die Batterie enthält Lithium und kann bei unsachgemäßer Verwendung, Handhabung oder Entsorgung explodieren.

Die Batterie nicht:

- mit Wasser in Berührung bringen.
- über 100 C erhitzen.
- reparieren oder zerlegen.

Die örtlichen Bestimmungen für die Entsorgung von Sondermüll beachten.

ACHTUNG:

Bei der Installation von Lasergeräten (wie CD-ROM-Laufwerken, DVD- aufwerken, Einheiten mit Lichtwellenleitertechnik oder Sendern) Folgendes beachten:

- **Die Abdeckungen nicht entfernen. Durch Entfernen der Abdeckungen des Lasergeräts können gefährliche Laserstrahlungen freigesetzt werden. Das Gerät enthält keine zu wartenden Teile.**
- **Werden Steuerelemente, Einstellungen oder Durchführungen von Prozeduren anders als hier angegeben verwendet, kann gefährliche Laserstrahlung auftreten.**

VORSICHT

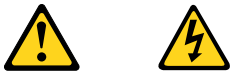
Einige Lasergeräte enthalten eine Laserdiode der Klasse 3A oder 3B. Beachten Sie Folgendes:

Laserstrahlung bei geöffneter Verkleidung. Nicht in den Strahl blicken. Keine Lupen oder Spiegel verwenden. Strahlungsbereich meiden.

≥18 kg ≥32 kg ≥55 kg

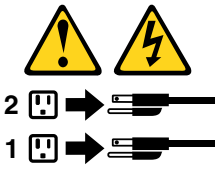
ACHTUNG:

Arbeitsschutzrichtlinien beim Anheben der Maschine beachten.



ACHTUNG:

Mit dem Netzschalter an der Einheit und am Netzteil wird die Stromversorgung für die Einheit nicht unterbrochen. Die Einheit kann auch mit mehreren Netzkabeln ausgestattet sein. Um die Stromversorgung für die Einheit vollständig zu unterbrechen, müssen alle zum Gerät führenden Netzkabel vom Netz getrennt werden.



סכנה

זרם חשמלי המועבר בכבלי חשמל, טלפון ותקשורת הוא מסוכן.

כדי להימנע מסכנת התחשמלות:

- אל תחברו או תנתקו כבלים, ואל תבצעו פעולת התקנה, תחזוקה או שינוי תצורה במוצר זה במהלך סופת ברקים.
- חברו את כל כבלי החשמל לשקע חשמל מחווט ומוארק כהלכה.
- חברו כל ציוד שיחובר למוצר זה לשקעי חשמל מחווטים כהלכה.
- במידת האפשר, השתמשו ביד אחת בלבד לחיבור או לניתוק של כבלי אותות.
- לעולם אל תפעילו ציוד כלשהו כאשר יש עדות לנזק מבני או לנזק כתוצאה מאש או ממים.
- נתקו את כבלי החשמל, מערכות התקשורת, התקני הרשת והמודמים המחוברים לפני פתיחת כיסויי ההתקן, אלא אם הליכי ההתקנה וקביעת התצורה מורים אחרת.
- בעת התקנה, העברה או פתיחת כיסויים במוצר זה או בהתקנים המחוברים, חברו ונתקו את הכבלים כמתואר בטבלה שלהלן.

כדי לחבר	כדי לנתק
1. כבו הכל. 2. ראשית, חברו את כל הכבלים להתקנים. 3. חברו את כבלי האותות למחברים. 4. חברו את כבלי החשמל לשקעים. 5. הפעילו את ההתקן.	1. כבו הכל. 2. ראשית, נתקו את כבלי החשמל מהשקעים. 3. נתקו את כבלי האותות מהמחברים. 4. הסירו את כל הכבלים מההתקנים.

זהירות:
בעת החלפת סוללת הליתיום, השתמשו רק בסוללה בעלת מק"ט 45C1566 או בסוג תואם שהומלץ על ידי היצרן. אם המערכת כוללת מודול המכיל סוללת ליתיום, החליפו אותו רק במודול מאותו סוג ומתוצרת אותו יצרן. הסוללה מכילה ליתיום, ועלולה להתפוצץ אם לא משתמשים ומטפלים בה או משליכים אותה כיאות.

לעולם:

- אל תטבלו במים
- אל תחממו לטמפרטורה הגבוהה מ-100°C (212°F)
- אל תתקנו או תפרקו

השליכו את הסוללה כנדרש לפי התקנות והחוקים המקומיים.

זהירות:
בעת התקנת מוצרי לייזר (כגון כונני תקליטורים ו-DVD, התקני סיב אופטי או משדרים), שימו לב לאזהרות הבאות:

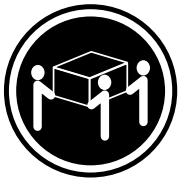
- אל תסירו את הכיסויים. הסרת הכיסויים של מוצר הלייזר עלולה לגרום לחשיפה לקרינת לייזר מסוכנת. אין חלקים ברי טיפול בתוך ההתקן.
- שינויים, שימוש בבקרות או ביצוע הליכים אחרים מאלה המתוארים כאן, עלולים לגרום לחשיפה לקרינה מסוכנת.

סכנה

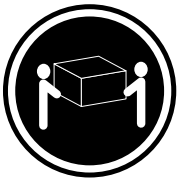
מוצרי לייזר מסוימים מכילים דיודת לייזר מסוג Class 3A או Class 3B. שימו לב לאזהרה הבאה:

כאשר הוא פתוח, המוצר פולט קרינת לייזר. אל תביטו ישירות בקרן, אל תביטו ישירות בעזרת ציוד אופטי, והימענו מחשיפה לקרן.

≤ 55 ק"ג (121.2 ליב')



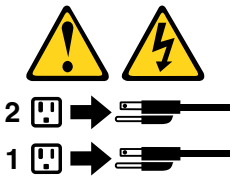
≤ 32 ק"ג (70.5 ליב')



≤ 18 ק"ג (37 ליב')

זהירות:
השתמשו בהליכים
הנאותים בעת
הרמת הציוד.

זהירות:
לחצן ההפעלה של ההתקן ומתג ההפעלה של ספק החשמל אינם מפסיקים את זרם החשמל המסופק להתקן. בנוסף, ההתקן עשוי לכלול יותר מכבל חשמל אחד. כדי לסלק את כל הזרם החשמלי מההתקן, ודאו שכל כבלי החשמל מנותקים ממקור החשמל.



PERICOLO

La corrente elettrica proveniente dai cavi di alimentazione, del telefono e di comunicazione può essere pericolosa.

Per evitare il rischio di scosse elettriche:

- **Non collegare o scollegare qualsiasi cavo oppure effettuare l'installazione, la manutenzione o la riconfigurazione del prodotto durante un temporale.**
- **Collegare tutti i fili elettrici a una presa di alimentazione correttamente cablata e dotata di messa a terra.**
- **Collegare alle prese elettriche appropriate tutte le apparecchiature che verranno utilizzate per questo prodotto.**

- **Se possibile, utilizzare solo una mano per collegare o scollegare i cavi di segnale.**
- **Non accendere assolutamente apparecchiature in presenza di incendi, perdite d'acqua o danno strutturale.**
- **Scollegare i cavi di alimentazione, i sistemi di telecomunicazione, le reti e il modem prima di aprire i coperchi del dispositivo, salvo istruzioni contrarie relative alle procedure di installazione e configurazione.**
- **Collegare e scollegare i cavi come descritto nella seguente tabella quando vengono effettuate operazioni di installazione, spostamento o apertura dei coperchi di questo prodotto o delle unità collegate.**

Per collegarsi	Per scollegarsi
1. SPEGNERE le apparecchiature. 2. Innanzitutto, collegare tutti i cavi alle unità. 3. Collegare i cavi di segnale ai connettori. 4. Collegare i cavi di alimentazione alla presa. 5. Accendere l'unità.	1. SPEGNERE le apparecchiature. 2. Innanzitutto, rimuovere i cavi di alimentazione dalla presa. 3. Rimuovere i cavi di segnale dai connettori. 4. Rimuovere tutti i cavi dalle unità.

ATTENZIONE:

Quando si sostituisce la batteria al litio, utilizzare solo il Numero parte 45C1566 o un tipo di batteria equivalente consigliato dal produttore. Se sul sistema è presente un modulo che contiene una batteria al litio, sostituirlo solo con un tipo di modulo dello stesso tipo della stessa casa di produzione. La batteria contiene litio e può esplodere se usata, maneggiata o smaltita in modo non corretto.

Non:

- **Gettare o immergere la batteria nell'acqua**
- **Riscaldarla ad una temperatura superiore ai 100 gradi C (212 gradi F)**
- **Smontarla, ricaricarla o tentare di ripararla**

Le batterie usate vanno smaltite in accordo alla normativa in vigore (DPR 915/82 e successive disposizioni e disposizioni locali).

ATTENZIONE:

Quando vengono installati prodotti laser (quali CD-ROM, unità DVD-ROM, unità a fibre ottiche o trasmittenti), tener presente quanto segue:

- **Non rimuovere gli sportelli. L'apertura di un'unità laser può determinare l'esposizione a radiazioni laser pericolose. All'interno dell'unità non vi sono parti su cui effettuare l'assistenza tecnica.**
- **L'utilizzo di controlli, regolazioni o l'esecuzione di procedure non descritti nel presente manuale possono provocare l'esposizione a radiazioni pericolose.**

PERICOLO

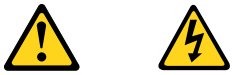
Alcune unità laser contengono un diodo laser di Classe 3A o Classe 3B. Tener presente quanto segue:

Aprendo l'unità vengono emesse radiazioni laser. Non fissare il fascio, non guardarlo direttamente con strumenti ottici ed evitare l'esposizione al fascio.

≥18 kg ≥32 kg ≥55 kg

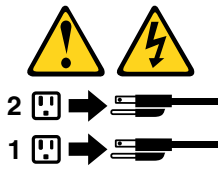
ATTENZIONE:

Prestare attenzione nel sollevare l'apparecchiatura.



ATTENZIONE:

Il pulsante di controllo dell'alimentazione presente sull'unità e l'interruttore dell'alimentatore non disattivano l'alimentazione corrente fornita all'unità. E' possibile che l'unità disponga di più cavi di alimentazione. Per disattivare l'alimentazione dall'unità, accertarsi che tutti i cavi di alimentazione siano scollegati dalla fonte di alimentazione.



위험

전원, 전화, 통신 케이블의 전류는 위험합니다.

감전의 위험을 피하려면 다음과 같이 하십시오.

- 번개가 치는 날에는 케이블을 연결 또는 분리하거나 본 제품을 설치, 보수, 재구성하지 마십시오.

- 모든 전원 코드는 올바르게 접지된 전기 콘센트에 연결하십시오.

- 본 제품에 연결될 장치는 올바르게 배선된 콘센트에 연결하십시오.

- 신호 케이블을 연결 또는 분리할 때 가능하면 한 손만을 사용하십시오.

- 불 또는 물로 인한 손상이나 구조적인 손상이 있을 경우 장치의 전원을 절대 켜지 마십시오.

- 설치 및 구성 과정에 별도의 지시 사항이 없는 경우, 장치의 덮개를 열기 전에 연결된 전원 코드, 원격 통신 시스템, 네트워크, 모뎀을 분리하십시오.

- 본 제품이나 연결된 장치를 설치, 이동하거나 덮개를 열 때 다음 표와 같은 순서로 케이블을 연결하거나 분리하십시오.

연결할 때:	분리할 때:
1. 모든 장치의 전원을 끄십시오. 2. 먼저 모든 케이블을 장치에 연결하십시오. 3. 커넥터에 신호 케이블을 연결하십시오. 4. 콘센트에 전원 코드를 연결하십시오. 5. 장치의 전원을 켜십시오.	1. 모든 장치의 전원을 끄십시오. 2. 먼저 콘센트에서 전원 코드를 분리하십시오. 3. 커넥터에서 신호 케이블을 분리하십시오. 4. 장치에서 모든 케이블을 분리하십시오.

주의:
배터리를 교환할 때는 Part Number 45C1566 또는 제조업체에서 지정한 동일한 종류의 제품을 사용하십시오. 사용자의 시스템이 리튬 배터리를 포함하는 모듈일 경우, 동일한 제조업체에서 동일한 모듈 유형으로 생산된 제품으로 교체하십시오. 배터리에는 리튬이 함유되어 있어 잘못 사용, 취급 또는 폐기할 경우 폭발의 위험이 있습니다.

사고를 방지하려면 다음 사항을 준수하십시오.

- 배터리를 물 속에 던지거나 침수시키지 마십시오.

- 100℃(212°F) 이상 가열하지 마십시오.

- 수리하거나 분해하지 마십시오.

배터리를 폐기할 때는 법령 또는 회사의 안전 수칙에 따라 폐기하십시오.

주의:
CD-ROM, DVD-ROM 장치, 광섬유 장치 또는 송신 장치와 같은 레이저 제품을 설치할 때, 다음과 같은 취급 주의사항을 참고하십시오.

- 덮개를 열지 마십시오. 덮개를 열면 레이저 복사 에너지에 노출될 위험이 있습니다. 장치 내부에는 사용자가 조정하거나 수리할 수 있는 부품이 없습니다.

- 규정된 것 이외의 절차 수행, 제어 조정 등의 행위로 인해 해로운 레이저 복사에 노출될 수 있습니다.

위험

일부 장비에는 임베디드 클래스 3A 또는 클래스 3B 레이저 다이오드가 있습니다. 다음 주의사항에 유의하십시오.

드라이브가 열리면 레이저 복사 에너지가 방출됩니다. 광선이 눈에 직접 쏘이지 않도록 하십시오. 나안 또는 광학 기구를 착용한 상태에서 광선을 직접 바라보지 않도록 하십시오.

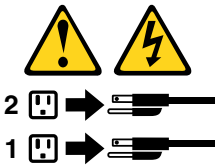
≥18 kg (37 lbs)

≥32 kg (70.5 lbs)

≥55 kg (121.2 lbs)

주의:
제품을 들어 올릴 때
안전 규제를 따르십시오.

주의:
장치의 전원 제어 버튼 및 전원 공급 장치의 전원 스위치를 사용하여 장치에 공급되는 전기를 차단하지 마십시오. 장치는 둘 이상의 코드를 가지고 있을 수 있습니다. 장치에서 모든 전원을 차단하려면 콘센트에서 코드가 모두 분리되어 있는지 확인하십시오.



PELIGRO

La corriente eléctrica procedente de cables de alimentación, teléfonos y cables de comunicación puede ser peligrosa.

Para evitar el riesgo de descarga eléctrica:

- **No conecte ni desconecte los cables ni realice ninguna tarea de instalación, mantenimiento o reconfiguración de este producto durante una tormenta eléctrica.**
- **Conecte todos los cables de alimentación a tomas de corriente debidamente cableadas y conectadas a tierra.**
- **Cualquier equipo que se conecte a este producto también debe conectarse a tomas de corriente debidamente cableadas.**
- **Siempre que sea posible, utilice una sola mano para conectar o desconectar los cables de señal.**
- **No encienda nunca un equipo cuando hay señales de fuego, agua o daños estructurales.**

- **Desconecte los cables de alimentación, los sistemas de telecomunicaciones, las redes y los módems conectados antes de abrir las cubiertas de los dispositivos, a menos que se indique lo contrario en los procedimientos de instalación y configuración.**
- **Conecte y desconecte los cables, como se describe en la tabla siguiente, cuando instale, mueva o abra las cubiertas de este producto o de los dispositivos conectados.**

Para conectar	Para desconectar
1. APÁGUELO todo. 2. En primer lugar, conecte todos los cables a los dispositivos. 3. Conecte los cables de señal a los conectores. 4. Enchufe los cables de alimentación a las tomas de corriente. 5. Encienda el dispositivo.	1. APÁGUELO todo. 2. En primer lugar, desenchufe los cables de alimentación de las tomas de corriente. 3. Desconecte los cables de señal de los conectores. 4. Desconecte todos los cables de los dispositivos.

PRECAUCIÓN:

Cuando sustituya una batería de litio, utilice solamente una batería número de pieza 45C1566 u otra de tipo equivalente recomendada por el fabricante. Si su sistema dispone de un módulo que contiene una batería de litio, reemplácelo sólo con el mismo tipo de módulo, del mismo fabricante. La batería contiene litio y puede explotar si no se utiliza, manipula o desecha correctamente.

No debe:

- **Arrojarla al agua o sumergirla en ella**
- **Exponerla a temperaturas superiores a 100°C (212°F)**
- **Repararla o desmontarla**

Deshágase de la batería según especifiquen las leyes o normas locales.

PRECAUCIÓN:

Cuando haya productos láser (como unidades de CD-ROM, unidades de DVD, dispositivos de fibra óptica o transmisores) instalados, tenga en cuenta lo siguiente:

- **No quite las cubiertas. Si quita las cubiertas del producto láser, podría quedar expuesto a radiación láser peligrosa. Dentro del dispositivo no existe ninguna pieza que requiera servicio técnico.**
- **Si usa controles o ajustes o realiza procedimientos que no sean los especificados aquí, podría exponerse a radiaciones peligrosas.**

PELIGRO

Algunos productos láser tienen incorporado un diodo láser de clase 3A o clase 3B. Tenga en cuenta lo siguiente:

Cuando se abre, queda expuesto a radiación láser. No mire directamente al rayo láser, ni siquiera con instrumentos ópticos, y evite exponerse directamente al rayo láser.

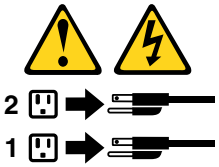
≥18 kg ≥32 kg ≥55 kg

PRECAUCIÓN:

Adopte procedimientos seguros al levantar el equipo.

PRECAUCIÓN:

El botón de control de alimentación del dispositivo y el interruptor de alimentación de la fuente de alimentación no desconectan la corriente eléctrica suministrada al dispositivo. Además, el dispositivo podría tener más de un cable de alimentación. Para suprimir toda la corriente eléctrica del dispositivo, asegúrese de que todos los cables de alimentación estén desconectados de la toma de corriente.



Chapter 3. General information

This chapter provides general information that applies to all machine types supported by this publication.

Lenovo ThinkVantage Tools

The Lenovo ThinkVantage® Tools program guides you to a host of information sources and provides easy access to various tools to help you work more easily and securely.

To access the Lenovo ThinkVantage Tools program, click **Start → All Programs → Lenovo ThinkVantage Tools**.

The following table lists the programs that you can access from the Lenovo ThinkVantage Tools program. To access a program, double-click the corresponding icon.

Table 1. Program icon names in Lenovo ThinkVantage Tools

Program name	Icon name in Lenovo ThinkVantage Tools
Create Recovery Media	Factory Recovery Disks
Fingerprint Software	Fingerprint Reader
Lenovo ThinkVantage Toolbox/Lenovo Solution Center	System Health and Diagnostics
SimpleTap	SimpleTap
ThinkVantage Password Manager	Password Vault
ThinkVantage Power Manager	Power Controls
ThinkVantage Rescue and Recovery®	Enhanced Backup and Restore
ThinkVantage System Update	Update and Drives
Communications Utility	Web Conferencing
View Management Utility	Screen Layout

Lenovo Welcome

The Lenovo Welcome program introduces you to some innovative built-in features of Lenovo and guides you through a few important setup tasks to help you make the most of your computer.

Lenovo ThinkVantage Toolbox

The Lenovo ThinkVantage Toolbox program helps you maintain your computer, improve computing security, diagnose computer problems, get familiar with the innovative technologies provided by Lenovo, and get more information about your computer. See “Lenovo ThinkVantage Toolbox” on page 51 for detailed information.

Lenovo Solution Center

The Lenovo Solution Center program enables you to troubleshoot and resolve computer problems. It combines diagnostic tests, system information collection, security status, and support information, along with hints and tips for maximum system performance. See “Lenovo Solution Center” on page 52 for detailed information.

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SimpleTap

The SimpleTap program provides you with a quick way to customize some basic computer settings such as muting the speakers, adjusting the volume, locking the computer operating system, launching a program, opening a Web page, opening a file, and so on. You also can use the SimpleTap program to access the Lenovo App Shop, from which you can download various applications and computer software.

To start the SimpleTap program in a quick way, do any of the following:

- Click the red SimpleTap launch point on the desktop. The red launch point is available on the desktop after you have launched the SimpleTap program for the first time.
- Press the blue ThinkVantage button if your keyboard has one.

Note: The SimpleTap program is only available on certain models preinstalled with the Windows 7 operating system. If your Windows 7 model is not preinstalled with the SimpleTap program, you can download it from http://www.lenovo.com/support.

Additional information resources

If you have Internet access, the most up-to-date information for your computer is available from the World Wide Web.

You can find the following information:

- CRU removal and installation instructions
- Publications
- Troubleshooting information
- Parts information
- Downloads and drivers
- Links to other useful sources of information

To access this information, go to:
http://www.lenovo.com/support

Specifications

This section lists the physical specifications for your computer.

Dimensions

Width: 506.8 mm (19.95 inches)

Height: 411.0 mm (16.18 inches)

Depth: 71.5 mm (2.81 inches) for non-touch model; 78.0 mm (3.07 inches) for touch model

Weight

Maximum configuration as shipped: 7.54 kg (16.62 lb) for non-touch model; 8.85 kg (19.51 lb) for touch model

Environment

- Air temperature:

  Operating: 10°C to 35°C (50°F to 95°F)

  Storage: -20°C to 60°C (-4°F to 140°F)

  Storage: -10°C to 60°C (14°F to 140°F) (without package)
- Humidity:

  Operating: 20% to 80% (non-condensing)

  Storage: 20% to 90% (non-condensing)
- Altitude:

  Operating: -50 to 10 000 ft (-15.2 to 3 048 m)

  Storage: -50 to 35 000 ft (-15.2 to 10 668 m)

Electrical input

- Input voltage:
  - Low range:

    Minimum: 100 V ac

    Maximum: 127 V ac

    Input frequency range: 50 to 60 Hz
  - High range:

    Minimum: 200 V ac

    Maximum: 240 V ac

    Input frequency range: 50 to 60 Hz

Chapter 4. General Checkout

Attention

The drives in the computer you are servicing might have been rearranged or the drive startup sequence changed. Be extremely careful during write operations such as copying, saving, or formatting. Data or programs can be overwritten if you select an incorrect drive.

General error messages appear if a problem or conflict is found by an application program, the operating system, or both. For an explanation of these messages, refer to the information supplied with that software package.

Before replacing any FRUs, ensure that the latest level of BIOS is installed on the system. A down-level BIOS might cause false errors and unnecessary replacement of the system board. For more information on how to determine and obtain the latest level BIOS, see “BIOS levels” on page 313.

Use the following procedure to help determine the cause of the problem:

1. Power-off the computer and all external devices.
2. Check all cables and power cords.
3. Set all display controls to the middle position.
4. Power-on all external devices.
5. Power-on the computer.
   - Look for displayed error codes
   - Listen for beep codes
   - Look for readable instructions or a main menu on the display.

   If you *did not* receive the correct response, proceed to step 6 on page 33.

   If you *do* receive the correct response, proceed to step 7 on page 33.
6. Look at the following conditions and follow the instructions:
   - If you hear beep codes during POST, go to “Beep symptoms” on page 79.
   - If the computer displays a POST error, go to “POST error codes” on page 79.
   - If the computer hangs and no error is displayed, continue at step 7 on page 33.
7. Run the Diagnostic programs. See “Diagnostics” on page 51.
   - If you receive an error, replace the part that the diagnostic program calls out or go to “Diagnostic error codes” on page 62.
   - If the test stops and you cannot continue, replace the last device tested.

Problem determination tips

Due to the variety of hardware and software combinations that can be encountered, use the following information to assist you in problem determination. If possible, have this information available when requesting assistance from Service Support and Engineering functions.

- Machine type and model
- Processor or hard disk drive upgrades
- Failure symptom
  - Do diagnostics indicate a failure?
  - What, when, where, single, or multiple systems?
  - Is the failure repeatable?

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  - Has this configuration ever worked?
  - If it has been working, what changes were made prior to it failing?
  - Is this the original reported failure?
- Diagnostics version
  - Type and version level
- Hardware configuration
  - Print (print screen) configuration currently in use
  - BIOS level
- Operating system software
  - Type and version level

Notes: To eliminate confusion, identical systems are considered identical only if they:

1. Are the exact machine type and models
2. Have the same BIOS level
3. Have the same adapters/attachments in the same locations
4. Have the same address jumpers/terminators/cabling
5. Have the same software versions and levels
6. Have the same Diagnostic Diskettes (version)
7. Have the same configuration options set in the system
8. Have the same setup for the operating system control files

Comparing the configuration and software set-up between “working and non-working” systems will often lead to problem resolution.

Chapter 5. Troubleshooting and diagnostics

This chapter describes some basic troubleshooting and diagnostic programs. If your computer problem is not described here, see “Diagnostics” on page 51 for additional troubleshooting resources.

Basic troubleshooting

The following table provides information to help you troubleshoot your computer problems.

Note: If you cannot correct the problem, have the computer serviced. For a list of service and support telephone numbers, refer to the *ThinkCentre Safety and Warranty Guide* that comes with your computer or go to the Lenovo Support Web site at http://www.lenovo.com/support/phone.

Symptom	Action
The computer does not start when you press the power switch.	Verify that: • The power cord is correctly connected to the rear of the computer and to a working electrical outlet. • If your computer has a secondary power switch on the rear of the computer, make sure that it is switched on. • The power indicator on the front of the computer is on. • The computer voltage matches the voltage available at the electrical outlet for your country or region.
The monitor screen is blank.	Verify that: • The monitor power cord is correctly connected to the monitor and to a working electrical outlet. • The monitor is turned on and the brightness and contrast controls are set correctly. • The computer voltage matches the voltage available at the electrical outlet for your country or region.
The keyboard does not work.	Verify that: • The computer is turned on. • The keyboard is securely connected to a USB connector on the computer. • No keys are stuck.
The mouse does not work.	Verify that: • The computer is turned on. • The mouse is securely connected to a USB connector on the computer. • The mouse is clean.

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Symptom	Action
The wireless keyboard or mouse does not work.	Verify that: • The computer is turned on. • The battery or batteries installed in the wireless keyboard or mouse are in good condition. • The wireless configurations are all set correctly. You might need to refer to the documentation that come with the wireless keyboard or mouse, or refer to your Windows Help and Support information system for wireless related instructions. If your wireless mouse has a dongle, make sure the dongle is correctly connected to one of the USB connectors on the computer. • For the wireless keyboard, no keys are stuck. • The wireless mouse is clean.
The operating system does not start.	Verify that: • The startup sequence includes the device where the operating system resides. Usually, the operating system is on the hard disk drive. For more information, see “Selecting a startup device” on page 59.
The computer beeps multiple times before the operating system starts.	Verify that no keys are stuck.

Troubleshooting procedure

Use the following procedure as a starting point for diagnosing problems you are experiencing with your computer:

1. Verify that the cables for all attached devices are connected correctly and securely.
2. Verify that all attached devices that require ac power are connected to properly grounded, functioning electrical outlets.
3. Verify that all attached devices are enabled in the BIOS settings of your computer. For more information about accessing and changing the BIOS settings, refer to your Chapter 6 “Using the Setup Utility program” on page 57.
4. Go to the “Troubleshooting” on page 37 and follow the instructions for the type of problem you are experiencing. If the Troubleshooting information does not help you resolve a problem, continue with the next step.
5. Try using a previously captured configuration to see if a recent change to hardware or software settings has caused a problem. Before restoring a previous configuration, capture your current configuration in case the older configuration settings do not solve the problem or have adverse affects. To restore a captured configuration, click **Start → Control Panel → System and Security → System → System Protection → System Restore** . If this does not correct the problem, continue with the next step.
6. Run the diagnostic programs. See “Diagnostics” on page 51 for more information.
   - If the diagnostic programs detect a hardware failure, contact the Lenovo Customer Support Center. See “Additional information resources” on page 30 for more information.
   - If you are unable to run the diagnostic programs, contact the Lenovo Customer Support Center. See “Additional information resources” on page 30 for more information.
   - If the diagnostic programs do not detect a hardware failure, continue with the next step.
7. Use an antivirus program to see if your computer has been infected by a virus. If the program detects a virus, remove the virus.
8. If none of these actions solve the problem, seek technical assistance. See “Additional information resources” on page 30 for more information.

Troubleshooting

Use the troubleshooting information to find solutions to problems that have definite symptoms.

If the symptom your computer is experiencing occurred immediately after a new hardware option or new software installed, do the following before referring to the troubleshooting information:

1. Remove the new hardware option or software. If you must remove the computer cover to remove a hardware option, have the computer serviced. For your safety, do not operate the computer with the cover removed.
2. Run the diagnostic programs to ensure your computer is operating correctly.
3. Reinstall the new hardware option or software.

Select the problem your computer is experiencing from the following list:

- "Audio problems" on page 37
- "CD problems" on page 38
- "DVD problems" on page 39
- "Intermittent problems" on page 41
- "Keyboard, mouse, or pointing device problems" on page 41
- "Monitor problems" on page 43
- "Networking problems" on page 44
- "Option problems" on page 47
- "Performance and lockup problems" on page 48
- "Printer problems" on page 49
- "Serial port problems" on page 49
- "Software problems" on page 50
- "USB problems" on page 51

Audio problems

Select your symptom from the following list:

- "No audio in Windows" on page 37
- "An audio disc or AutoPlay-enabled disc does not automatically play when it is inserted into a drive" on page 38
- "Sound comes from one external speaker only" on page 38
- "No audio in DOS applications or games" on page 38

No audio in Windows

Symptom: No audio in Windows

Actions:

- If you are using powered external speakers that have an On/Off control, verify that the On/Off control is set to the **On** position and the speaker power cable is connected to a properly grounded, functional ac electrical outlet.
- If your external speakers have a volume control, verify that the volume control is not set too low.
- Double-click the speaker icon in the Windows notification area. A master volume-control window opens. Verify that the **Mute** settings are not checked and none of the volume settings is set too low.

- Some models have a front audio panel you can use to adjust volume. If you have a front audio panel, verify that the volume is not set too low.
- Verify that your external speakers (and headphones, if used) are connected to the correct audio connector on the computer. Most speaker cables are color-coded to match the connector.

Note: When external-speaker or headphone cables are attached to the audio connector, the internal speaker, if present, is disabled. In most cases, if an audio adapter is installed in one of the expansion slots, the audio function built into the system board is disabled; use the audio jacks on the adapter.

- Make sure that the program you are running is designed for use in the Microsoft Windows operating system. If the program is designed to run in DOS, the program does not use the Windows sound feature and must be configured to use SoundBlaster Pro or SoundBlaster emulation.
- Verify that the audio device drivers are correctly installed. See Microsoft Windows help system for more information.

If these actions do not correct the problem, run the diagnostic programs (see “Diagnostics” on page 51 for instructions). If you need technical assistance, see “Additional information resources” on page 30.

An audio disc or AutoPlay-enabled disc does not automatically play when it is inserted into a drive

Symptom: An audio disc or AutoPlay-enabled disc does not automatically play when it is inserted into a drive

Action: See “CD problems” on page 38.

Sound comes from one external speaker only

Symptom: Sound comes from one external speaker only.

Actions:

- Ensure that the speaker cable is inserted completely into the connector on the computer.
- Make sure the cable that attaches the left speaker to the right speaker is securely connected.
- Double-click the speaker icon in the Windows notification area. A master volume-control window opens. Verify that the Balance settings are set correctly.

If these actions do not correct the problem, you might have a failing speaker. Have the speaker serviced. If you need technical assistance, see “Additional information resources” on page 30.

No audio in DOS applications or games

Symptom: No audio in DOS applications or games

Actions:

- Make sure the DOS application or game is configured to use SoundBlaster Pro or SoundBlaster emulation. Refer to the documentation that comes with the application or game for instructions on setting sound-card settings.
- If these actions do not correct the problem, run the diagnostic programs (see “Diagnostics” on page 51 for instructions). If you need technical assistance, see “Additional information resources” on page 30.

CD problems

Select your symptom from the following list:

- “An audio disc or AutoPlay-enabled disc does not automatically play when it is inserted into a CD drive” on page 39

- “A CD or DVD does not work” on page 39
- “Unable to use a startable (bootable) recovery medium, such as the Product Recovery CD, to start your computer” on page 39

An audio disc or AutoPlay-enabled disc does not automatically play when it is inserted into a CD drive

Symptom: An audio disc or AutoPlay-enabled disc does not automatically play when it is inserted into a CD drive.

Actions:

- If you have multiple CD or DVD drives installed (or a combination of CD and DVD drives), try inserting the disc into the other drive. In some cases, only one of the drives is connected to the audio subsystem.
- If you are using the Windows 7 operating system, follow the action for “A CD or DVD does not work” on page 39.

If this does not correct the problem, follow the action for “A CD or DVD does not work” on page 39.

A CD or DVD does not work

Symptom: A CD or DVD does not work.

Actions:

- Verify that the disc is inserted correctly, with its label up.
- Make sure that the disc you are using is clean. To remove dust or fingerprints, wipe the disc clean with a soft cloth from the center to the outside. Wiping a disc in a circular motion might cause loss of data.
- Verify that the disc you are using is not scratched or damaged. Try inserting another disc that you know is good. If you cannot read from a known-good disc, you might have a problem with your CD or DVD drive or the cabling to your CD or DVD drive. Make sure that the power cable and signal cable are securely connected to the drive.

Unable to use a startable (bootable) recovery medium, such as the Product Recovery CD, to start your computer

Symptom: Unable to use a startable (bootable) recovery medium, such as the Product Recovery CD, to start your computer.

Action: Make sure that the CD or DVD drive is in the startup sequence before the hard disk drive. Refer to your “Selecting or changing the startup device sequence” on page 59 for information on viewing and changing the startup sequence. Note that on some models the startup sequence is permanently set and cannot be changed.

If these actions do not correct the problem, run the diagnostic programs (see “Diagnostics” on page 51 for instructions). If you need technical assistance, see “Additional information resources” on page 30.

DVD problems

Select your symptom from the following list:

- “Black screen instead of DVD video” on page 40
- “DVD movie will not play” on page 40
- “No audio or intermittent audio while playing DVD movie” on page 40
- “Playback is very slow or choppy” on page 40
- “Invalid disc or no disc found message” on page 40

Black screen instead of DVD video

Symptom: Black screen instead of DVD video

Actions:

- Restart the DVD player program.
- Close any open files, turn off the computer, and then restart the computer.
- Try a lower screen resolution or color depth.

If these actions do not correct the problem, run the diagnostic programs (see “Diagnostics” on page 51 for instructions). If you need technical assistance, see “Additional information resources” on page 30.

DVD movie will not play

Symptom: DVD movie will not play.

Actions:

- Make sure that the disc surface is clean and not scratched.
- Check the disc or package for regional coding. You might need to purchase a disc with coding for the region where you are using your computer.

If these actions do not correct the problem, run the diagnostic programs (see “Diagnostics” on page 51 for instructions). If you need technical assistance, see “Additional information resources” on page 30.

No audio or intermittent audio while playing DVD movie

Symptom: No audio or intermittent audio while playing DVD movie.

Actions:

- Check the volume control settings on your computer and on your speakers.
- Make sure that the disc surface is clean and not scratched.
- Check all cable connections to and from the speakers.
- Use the DVD menu for the video to select a different audio track.

If these actions do not correct the problem, run the diagnostic programs (see “Diagnostics” on page 51 for instructions). If you need technical assistance, see “Additional information resources” on page 30.

Playback is very slow or choppy

Symptom: Playback is very slow or choppy.

Actions:

- Disable any background programs, such as AntiVirus or Desktop Themes.
- Ensure that video resolution is set to less than 1152 x 864.

If these actions do not correct the problem, run the diagnostic programs (see “Diagnostics” on page 51 for instructions). If you need technical assistance, see “Additional information resources” on page 30.

Invalid disc or no disc found message

Symptom: Invalid disc or no disc found message

Actions:

- Ensure that a DVD disc is in the drive with the shiny side of the disc facing down.
- Ensure that video resolution is set to less than 1152 x 864.
- On computers that have a CD-ROM or CD-RW drive in addition to a DVD-ROM drive, make sure that the DVD disc is in the drive labeled “DVD”.

If these actions do not correct the problem, run the diagnostic programs (see “Diagnostics” on page 51 for instructions). If you need technical assistance, see “Additional information resources” on page 30.

Intermittent problems

Symptom: A problem occurs only occasionally and is difficult to repeat.

Actions:

- Verify that all cables and cords are securely connected to the computer and attached devices.
- Verify that when the computer is on, the fan is not blocked (there is air flow around the fan), and the fan is working. If airflow is blocked or the fan is not working, the computer might overheat.
- If SCSI devices are installed, verify that the last external device in each SCSI chain is terminated correctly. (See your SCSI documentation.)

If these actions do not correct the problem, run the diagnostic programs (see “Diagnostics” on page 51 for instructions). If you need technical assistance, see “Additional information resources” on page 30.

Keyboard, mouse, or pointing device problems

Select your symptom from the following list:

- “All or some keys on the keyboard do not work” on page 41
- “The mouse or pointing device does not work” on page 42
- “The pointer on the screen does not move smoothly with the mouse” on page 42
- “The fingerprint reader does not work” on page 42
- “The wireless keyboard does not work” on page 42

All or some keys on the keyboard do not work

Symptom: All or some keys on the keyboard do not work.

Actions:

- Verify that the keyboard cable is securely connected to the correct connector on the computer.
- If you are using an Enhanced Performance USB keyboard and one or more of the Rapid Access buttons are the only keys that are not working, these buttons might have been disabled or have not been assigned to a function. Use the help system in the Enhanced Performance Customization Keyboard program to help diagnose problems with the Rapid Access buttons.
- On the Windows 7 operating system, do the following:
  1. Click **Start → Control Panel**.
  2. Click **Hardware and Sound**.
  3. Click **Devices and Printers**.
  4. Double-click **USB Enhanced Performance Keyboard**. The USB Enhanced Performance Keyboard Customization program starts.

If these actions do not correct the problem, have the computer and keyboard serviced. See “Additional information resources” on page 30 for details.

The mouse or pointing device does not work

Symptom: The mouse or pointing device does not work.

Actions:

- Verify that the mouse or pointing-device cable is securely attached to the correct connector on the computer. Depending on the type of mouse you have, the mouse cable will connect to either the mouse, serial, or USB connector. Some keyboards have integrated USB connectors that can be used for a USB mouse or pointing device.
- Verify that the device drivers for the mouse or pointing device are installed correctly.
- If you are using a USB keyboard or mouse, verify that the USB connectors are enabled in the BIOS settings. See “Enabling or disabling a device” on page 59.

If these actions do not correct the problem, run the diagnostic programs (see “Diagnostics” on page 51 for instructions). If you need technical assistance, see “Additional information resources” on page 30.

The pointer on the screen does not move smoothly with the mouse

Symptom: The pointer on the screen does not move smoothly with the mouse.

Action: Erratic movement of the mouse pointer is generally caused by a buildup of dirt, oils, and other contaminants on the ball inside the mouse. Clean the mouse.

The fingerprint reader does not work

Symptom: The fingerprint reader does not work.

Action: The following could cause the fingerprint reader not to operate properly:

- Not enrolling your fingerprint correctly.
- Scratching the surface of the reader with a hard, pointed object.
- Scraping the surface of the reader with your nail or anything hard.
- Using or touching the reader with a dirty finger.
- The surface of your finger is very different from when you enrolled your fingerprint.

The wireless keyboard does not work

Symptom: The wireless keyboard does not work.

Action: If the Transceiver Communications LED is on and the wireless Keyboard does not work, restart your computer. If restarting your computer does not solve the problem, verify that the following conditions are met:

- The batteries are properly installed.
- The batteries still retain their current.
- The wireless keyboard is located less than ten meters away from the transceiver.
- The transceiver is fully installed.

Action: If the transceiver communications LED is not on, reconnect the transceiver and the keyboard.

Monitor problems

Note: Many monitors have status-indicator lights and built-in controls for adjusting brightness, contrast, width, height, and other picture adjustments. However, the controls vary from monitor type to monitor type.

Select your symptom from the following list:

- "Wrong characters appear on the screen" on page 43
- "The monitor works when you turn on the computer, but goes blank after some period of computer inactivity" on page 43
- "The monitor works when you turn on the computer, but goes blank when you start some application programs" on page 43
- "The image appears to be flickering" on page 43
- "The image is discolored" on page 44

Wrong characters appear on the screen

Symptom: Wrong characters appear on the screen.

Action: Have the computer serviced. For details, see "Additional information resources" on page 30.

The monitor works when you turn on the computer, but goes blank after some period of computer inactivity

Symptom: The monitor works when you turn on the computer, but goes blank after some period of computer inactivity.

Action: The computer is probably set for energy savings with the power-management feature. If the power-management feature is enabled, disabling it or changing the settings might solve the problem.

If these actions do not correct the problem, run the diagnostic programs (see "Diagnostics" on page 51 for instructions). If you need technical assistance, see "Additional information resources" on page 30.

The monitor works when you turn on the computer, but goes blank when you start some application programs

Symptom: The monitor works when you turn on the computer, but goes blank when you start some application programs.

Action:

Verify that the necessary device drivers for the application programs are installed. Refer to the documentation for the affected application program to see if device drivers are required.

If these actions do not correct the problem, run the diagnostic programs (see "Diagnostics" on page 51 for instructions). If you need technical assistance, see "Additional information resources" on page 30.

The image appears to be flickering

Symptom: The image appears to be flickering.

Actions:

- The monitor might be operating in a low-refresh rate display mode. Set the monitor to the highest, noninterlaced refresh rate supported by your monitor and the video controller in your computer.
- The monitor might be affected by interference from nearby equipment. Magnetic fields around other devices, such as transformers, appliances, fluorescent lights, and other monitors might be causing the

problem. Move fluorescent desk lighting or any equipment that produces magnetic fields farther away from the monitor. If this does not correct the problem, do the following:

1. Turn off the monitor. (Moving a color monitor while it is turned on might cause screen discoloration.)
2. Adjust the placement of the monitor and other devices so that they are at least 305 mm (12 inches) apart.
3. Turn on the monitor.

- You can reset the refresh rate through your operating system Control Panel:

  On the Windows 7 operating system, click **Start → Control Panel → Hardware and Sound → Adjust screen resolution → Advanced Settings**. Then click the **Monitor** tab and select a new refresh rate.
- See your operating system documentation or help for further information on monitor settings.

If these actions do not correct the problem, your monitor might need service. See “Additional information resources” on page 30 for details.

The image is discolored

Symptom: The image is discolored.

Action: The monitor might be affected by interference from nearby equipment. Magnetic fields around other devices, such as transformers, appliances, fluorescent lights, and other monitors might be causing the problem. Move fluorescent desk lighting or any equipment that produces magnetic fields further away from the monitor. If this does not correct the problem, do the following:

1. Turn off the monitor. (Moving a color monitor while it is turned on might cause screen discoloration.)
2. Adjust the placement of the monitor and other devices so that they are at least 305 mm (12 inches) apart.
3. Turn on the monitor.

If these actions do not correct the problem, your monitor might need service. See “Additional information resources” on page 30 for details.

Networking problems

The following are the most common networking problems. Select your networking problem from the following list:

- “Ethernet problems” on page 44
- “A wireless LAN problem” on page 46
- “A wireless WAN problem” on page 46
- “Bluetooth problems” on page 46

Ethernet problems

For Ethernet problems, select your symptom from the following list:

- “Your computer cannot connect to the network” on page 44
- “The adapter stops working for no apparent reason” on page 45
- “If your computer is a Gigabit Ethernet model and you use a speed of 1000 Mbps, the connection fails or errors occur” on page 45
- “If your computer is a Gigabit Ethernet model, it cannot connect to the network at 1000 Mbps. Instead, it connects at 100 Mbps” on page 46

Your computer cannot connect to the network

Symptom: Your computer cannot connect to the network.

Actions: Make sure that:

- The cable is installed properly.

  The network cable must be securely connected to both the Ethernet connector of your computer and the RJ45 connector of the hub. The maximum allowable distance from the computer to hub is 100 meters. If the cable is connected and the distance is within acceptable limits but the problem persists, try a different cable.
- The cable is installed properly.
- You are using the correct device driver.

  On the Windows 7 operating system, do the following:

  1. Click **Start → Control Panel**.
  2. Click **Hardware and Sound**.
  3. Click **Device Manager**. If you are prompted for an administrator password or confirmation, type the password or provide confirmation.
  4. If an exclamation mark is displayed next to an adapter name under **Network adapters**, you might not use the correct driver or the driver is not enabled. To update the driver, right-click the highlighted adapter.
  5. Click **Update Driver Software**, and then follow the instructions on the screen.
- The switch port and the adapter have the same duplex setting.

  If you configured the adapter for full duplex, make sure the switch port is also configured for full duplex. Setting the wrong duplex mode can degrade performance, cause data loss, or result in lost connections.
- You have installed all networking software that is necessary for your network environment.

  Check with your LAN administrator for the necessary networking software.

The adapter stops working for no apparent reason

Symptom: The adapter stops working for no apparent reason.

Action: The network driver files may be corrupt or missing. Update the driver by referring to the “Solution” description for the procedure to make sure that the correct device driver is installed.

The Wake on LAN feature is not working

Symptom: The Wake on LAN (WOL) feature is not working.

Actions:

- Make sure that WOL is enabled in the BIOS Setup Utility program.
- If it is, check with your LAN administrator for the necessary settings.

If your computer is a Gigabit Ethernet model and you use a speed of 1000 Mbps, the connection fails or errors occur

Symptom: If your computer is a Gigabit Ethernet model and you use a speed of 1000 Mbps, the connection fails or errors occur.

Actions:

- Use Category 5 wiring and make sure that the network cable is securely connected.
- Connect to a 1000 BASE-T hub/switch (not 1000 BASE-X).

If your computer is a Gigabit Ethernet model, it cannot connect to the network at 1000 Mbps. Instead, it connects at 100 Mbps

Symptom: If your computer is a Gigabit Ethernet model, it cannot connect to the network at 1000 Mbps. Instead, it connects at 100 Mbps.

Actions:

- Try another cable.
- Make sure that the link partner is set to auto-negotiate.
- Make sure that the switch is 802.3ab-compliant (gigabit over copper).

A wireless LAN problem

Symptom: You cannot connect using the built-in wireless networking card.

Actions:

- Make sure that your wireless LAN driver is the latest version. Check the Web site and verify the driver version supported by Access Connections is the latest documented in the readme file.
- Make sure that your computer is within range of a wireless access point.
- Make sure that the wireless radio is enabled by double-clicking the Access Connections icon in the Windows notification area.

  Note: If your computer is preinstalled with the Windows 7 operating system, click **Show hidden icons** in the Windows notification area. The Access Connections icon is displayed. For more information about the icon, see the Help in Access Connections.
- Check Network Name (SSID), and your encryption information. Use Access Connections to verify this case-sensitive information.

A wireless WAN problem

Message: Unauthorized WAN card is plugged in - Power off and remove the WAN card.

Action: Seek technical assistance for help to remove the unauthorized WAN card. See “Additional information resources” on page 30 for more information.

Note: Some computer models do not have a wireless WAN.

Bluetooth problems

Bluetooth is available with some certain computer models.

For Bluetooth problems, select your symptom from the following list:

- “Sound does not come from the Bluetooth headphone” on page 46
- “PIM items sent from the Windows 7 operating system cannot be received correctly” on page 47

Sound does not come from the Bluetooth headphone

Symptom: Sound does not come from the Bluetooth headset/headphone but comes from the local speaker even though the headset/headphone is connected using Headset profile or AV profile.

Action: Do the following:

1. Exit the application that uses the sound device (for example, Windows Media Player).
2. Open the Control Panel by clicking **Start → Control Panel**.
3. Click **Hardware and Sound → Sound** .

4. Select the **Playback** tab.
5. If you are using Headset profile, select **Bluetooth Hands-free Audio** and click the **Set Default** button. If you are using AV profile, select **Stereo Audio** and click the **Set Default** button.
6. Click **OK** to close the Sound window.

PIM items sent from the Windows 7 operating system cannot be received correctly

Symptom: Personal Information Manager (PIM) items sent from the Windows 7 operating system cannot be received correctly into the address book of any other Bluetooth-enabled device.

Action: The Windows 7 operating system sends PIM items in XML format, but most Bluetooth-enabled devices handle PIM items in vCard format. If another Bluetooth-enabled device can receive a file through Bluetooth, a PIM item sent from the Windows 7 operating system system might be saved as a file with the extension contact.

Option problems

Use this information to diagnose problems with Lenovo hardware options that do not have their own troubleshooting information.

Select your symptom from the following list:

- "An option that was just installed does not work" on page 47
- "An option that previously worked does not work now" on page 47

An option that was just installed does not work

Symptom: An option that was just installed does not work.

Action: Verify that:

- The option is designed for your computer.
- You followed the installation instructions supplied with the option and the installation instructions provided with your computer, and all option files (such as device drivers, if required) are installed correctly.
- You have not loosened other installed options or cables.
- If the option is an adapter, you have provided enough hardware resources for the adapter to function correctly. See the documentation supplied with the adapter (as well as the documentation for any other installed adapters) to determine the resources required for each adapter.

If these actions do not correct the problem, run the diagnostic programs (see "Diagnostics" on page 51 for instructions). If you need technical assistance, see "Additional information resources" on page 30.

An option that previously worked does not work now

Symptom: An option that previously worked does not work now.

Actions:

- Verify that all option hardware and cable connections are secure.
- If the option comes with its own test instructions, use those instructions to test the option.
- If the failing option is a SCSI option, verify that:
  - The cables for all external SCSI options are connected correctly.
  - The last option in each SCSI chain, or the end of the SCSI cable, is terminated correctly.
  - All external SCSI options are turned on. External SCSI options must be turned on before the computer is turned on. For more information, see your SCSI documentation.

- Verify that the option and any required device drivers are installed correctly.

If these actions do not correct the problem, run the diagnostic programs (see “Diagnostics” on page 51 for instructions). If you need technical assistance, see “Additional information resources” on page 30.

Performance and lockup problems

Poor performance and lockup problems can be a result of any of the following:

- “Insufficient free hard disk drive space” on page 48
- “Excessive number of fragmented files” on page 49

Make a selection from the above list to find out more about the corrective actions you can take.

Insufficient free hard disk drive space

Symptom: Insufficient free hard disk drive space

The Windows operating system will slow down and might produce errors if the hard disk drive gets too full.

To check the amount of free space on the Windows 7 operating system, do the following:

1. Click **Start → Computer**.
2. Right-click your C drive entry and then click **Properties**. The amount of free disk space is displayed.

Actions to free up disk space:

- On the Windows 7 operating system, do one or all of the following:
  –
    1. Click **Start → Computer**.
    2. Right-click your C drive entry and then click **Properties**.
    3. Click **Disk Cleanup**.
    4. A list of unnecessary file categories is displayed. Select each file category you want to delete, and then click **OK**.
  –
    1. Click **Start → Control Panel**.
    2. Click **Programs**.
    3. Click **Turn Windows features on or off**.
    4. A list of optional Windows components is displayed. Follow the instructions on the screen.
  –
    1. Click **Start → Computer**.
    2. Right-click your C drive entry and then click **Properties**.
    3. Click **Disk Cleanup**.
    4. Click **Clean up system files**.
    5. Click the **More Options** tab.
    6. In the **Programs and Features** area, click the **Clean up** button.
    7. A list of installed applications is displayed. Select the application you want to remove. Click **Uninstall/Change**.

- Clean out your Inbox, Sent Items, and Deleted Items folders from your e-mail application. The folder names and procedures vary depending on your e-mail application. If you need assistance, see the help system for your e-mail application.

Excessive number of fragmented files

Symptom: Excessive number of fragmented files

Action: Run the Windows Disk Defragmenter program.

Note: Depending on the size of the hard disk drive and amount of data currently stored on the hard disk drive, the disk defragmentation process might take up to several hours to complete.

On the Windows 7 operating system, do the following:

1. Close any programs that are currently running and close any open windows.
2. Click **Start → Computer**.
3. Right-click your C drive entry and then click **Properties**.
4. Click the **Tools** tab.
5. Click **Defragment Now**, then click **Continue**.
6. Click **Defragment Now** again to start a disk-defragmentation process.

Printer problems

Printer is supported by some certain computer models.

Symptom: The printer does not work.

Actions: Verify that:

1. The printer is turned on and is online.
2. Paper is loaded correctly.
3. The printer signal cable is securely connected to the correct parallel, serial, or USB connector on the computer.

Note: Non-IEEE-approved printer signal cables might cause unpredictable problems.

1. Any device drivers and other software that came with the printer are correctly installed.
2. You have assigned the printer port correctly in your operating system, application program, or BIOS settings. For more information about BIOS settings, see Chapter 6 “Using the Setup Utility program” on page 57.

If the problem persists, run the tests described in the documentation that comes with your printer. If you cannot correct the problem, have the computer serviced. See “Additional information resources” on page 30.

Serial port problems

Serial port is available with some certain computer models.

Use this information to troubleshoot the serial port and devices attached to the serial port.

Symptom: Serial port cannot be accessed.

Actions:

- Make sure the serial cable is securely connected to the serial port on the computer and to the serial device. If the serial device has its own power cord, make sure it is attached to a properly grounded electrical outlet.

- If the serial device has its own On/Off switch, make sure it is in the On position.
- If the serial device has an Online switch, make sure it is in the Online position.
- If the serial device is a printer, make sure paper is loaded correctly.
- Verify that any software supplied with the serial device is correctly installed. Refer to the documentation for the serial-device option.
- Make sure that the serial-port adapter, if you added one, is properly installed and firmly seated.

If these actions do not correct the problem, run the diagnostic programs (see “Diagnostics” on page 51 for instructions). If you need technical assistance, see “Additional information resources” on page 30.

Software problems

Select your symptom from the following list:

- “When using a sort feature, dates do not sort in the correct order” on page 50
- “Software does not work as expected” on page 50

When using a sort feature, dates do not sort in the correct order

Symptom: When using a sort feature, dates do not sort in the correct order.

Action: Some software developed before the year 2000 used only the last two digits of a year to sort dates, always assuming the first two digits were 19. Consequently, these programs sort dates out of order. Check with your software manufacturer to see if any updates are available. Many software manufacturers make updates available from the World Wide Web.

Software does not work as expected

Symptom: Software does not work as expected.

Actions:

- Most software programs have built-in help systems that provide instructions for most tasks. If you are having difficulty performing a specific task within a software program, refer to the help system for that program. Help systems are typically accessible from a menu or button in the program, and frequently from the F1 key.
- If you are having difficulty with the Windows operating system or one of its components, refer to the Windows help system. It is accessible from the Windows **Start** menu.
- To determine if problems are caused by newly installed software, verify that:
  - Your computer has the minimum memory requirements needed to use the software. See the information supplied with the software to verify memory requirements. (If you just installed an adapter or memory, you might have a memory-address conflict.)
  - The software is designed to operate on your computer.
  - Other software works on your computer.
  - The software you are using works correctly on another computer.
- If you received any error messages while using the software program, see the printed documentation supplied with the software or the help system for that software for a description of the messages and solutions to the problem.
- Check with your software manufacturer to see if any updates are available. Many software manufacturers make updates available from the World Wide Web.

- If the software program used to work correctly, but does not work correctly now, do the following: On the Windows 7 operating system, click **Start → Control Panel → System and Security → System → System Protection → System Restore**.
- If you are unable to resolve the problem through other methods, uninstall the software program and reinstall it.

If these actions do not correct the problem, you might need technical assistance. Contact your software manufacturer or see “Additional information resources” on page 30 for details.

USB problems

Symptom: The USB connectors cannot be accessed.

Actions:

- Make sure the USB cable is securely connected to the USB connector and to the USB device. If the USB device has its own power cord, make sure it is attached to a properly grounded electrical outlet.
- If the USB device has its own On/Off switch, make sure it is in the On position.
- If the USB device has an Online switch, make sure it is in the Online position.
- If the USB device is a printer, make sure paper is loaded correctly.
- Make sure any device drivers or other software supplied with the USB device is correctly installed. Refer to the documentation for the USB device.
- Reset the device by detaching and reattaching the USB connector.

If these actions do not correct the problem, run the diagnostic programs to test the USB connector (see “Diagnostics” on page 51 for instructions). If the USB device came with its own diagnostics, run those diagnostics against the USB device. If you need technical assistance, see “Additional information resources” on page 30.

Diagnostics

Diagnostic programs are used to test hardware components of your computer. Diagnostic programs can also report operating-system-controlled settings that interfere with the correct operation of your system. You can use the preinstalled diagnostic program to diagnose computer problems, if your computer is running in the Windows® operating system.

Notes:

1. Depending on the date when your computer was manufactured, your computer is preinstalled with either the Lenovo Solution Center program or the Lenovo ThinkVantage Toolbox program for diagnostic purposes. For more information about the Lenovo ThinkVantage Toolbox program, see “Lenovo ThinkVantage Toolbox” on page 51. For more information about the Lenovo Solution Center program, see “Lenovo Solution Center” on page 52.
2. You can also download the PC-Doctor for DOS diagnostic program from http://www.lenovo.com/support. See “PC-Doctor for DOS” on page 52 for detailed information.
3. If you are unable to isolate and repair the problem yourself after running the programs, save and print the log files created by the programs. You will need the log files when you speak to a Lenovo technical support representative.

Lenovo ThinkVantage Toolbox

The Lenovo ThinkVantage Toolbox program helps you maintain your computer, improve computing security, diagnose computer problems, get familiar with the innovative technologies provided by Lenovo, and get

more information about your computer. You can use the diagnostics feature of the Lenovo ThinkVantage Toolbox program to test devices, diagnose computer problems, create bootable diagnostic media, update system drivers, and view system information.

To run the Lenovo ThinkVantage Toolbox program on the Windows 7 operating system, click **Start → All Programs → Lenovo ThinkVantage Tools → System Health and Diagnostics**. Follow the instructions on the screen.

Follow the instructions on the screen. For additional information, refer to the Lenovo ThinkVantage Toolbox help system.

Lenovo Solution Center

The Lenovo Solution Center program enables you to troubleshoot and resolve computer problems. It combines diagnostic tests, system information collection, security status, and support information, along with hints and tips for maximum system performance.

Notes:

- The Lenovo Solution Center program is available only on models preinstalled with the Windows 7 operating system. If your Windows 7 model is not preinstalled with the program, you can download it from http://www.lenovo.com/diagnose.
- If you are using the Windows Vista or Windows XP operating system, go to http://www.lenovo.com/diagnose for the latest information on diagnostics for your computer.

To run the Lenovo Solution Center program on the Windows 7 operating system, click **Start → All Programs → Lenovo ThinkVantage Tools → System Health and Diagnostics**. Follow the instructions on the screen.

For additional information, refer to the Lenovo Solution Center help system.

Note: If you are unable to isolate and repair the problem yourself after running the program, save and print the log files created by the program. You will need the log files when you speak to a Lenovo technical support representative.

PC-Doctor for DOS

You can also download the latest version of the PC-Doctor for DOS diagnostic program from http://www.lenovo.com/support. The PC-Doctor for DOS diagnostic program runs independently of the Windows operating system. Use the PC-Doctor for DOS diagnostic program if you are unable to start the Windows operating system or if the two diagnostic programs preinstalled on your computer have not been successful in isolating a possible problem. You can run the PC-Doctor for DOS diagnostic program from a diagnostic disc that you created.

Creating a diagnostic disc

This section provides instructions on how to create a diagnostic disc.

To create a diagnostic disc, do the following:

1. Download a self-starting bootable CD/DVD image (known as an ISO image) of the diagnostic program from:
   http://www.lenovo.com/support
2. Use any CD/DVD burning software to create a diagnostic disc with the ISO image.

Running the diagnostic program from a diagnostic disc

This section provides instructions on how to run the diagnostic program from a diagnostic disc that you created.

To run the diagnostic program from a diagnostic disc that you created, do the following:

1. Make sure the optical drive you want to use is set as the first boot device in the startup device sequence. See “Selecting or changing the startup device sequence” on page 59.
2. Make sure the computer is turned on and then insert the disc into the optical drive. The diagnostic program opens.

   Note: You can insert the disc into the optical drive when you are setting the startup device sequence. However, if you insert the disc into the optical drive when you have already entered the operating system, you need to restart the computer to access the diagnostic program.
3. Follow the instructions on the screen to select the diagnostic test you want to run.

   Note: For additional help, press the F1 key.
4. Remove the diagnostic disc from the optical drive when you complete the diagnostic process.

Navigating through the diagnostics programs

Use the cursor movement keys to navigate within the menus.

- The Enter key is used to select a menu item.
- The Esc key is used to back up to the previous menu.
- For online help, select F1.

Running tests

There are four ways to run the diagnostic tests.

- Using the cursor movement keys, highlight **Run Normal Test** or **Run Quick Test** from the Diagnostics menu and then press Enter. This automatically runs a pre-defined group of tests from each test category. **Run Normal Test** runs a more extensive set of tests than does **Run Quick Test** and takes longer to complete.
- Press F5 to automatically run all selected tests in all categories.
- From within a test category, press Ctrl-Enter to automatically run only the selected tests in that category.
- Using the cursor movement keys, highlight a single test within a test category, and then press Enter. This runs only that test.

Press Esc at any time to stop the testing process.

Test results (N/A, PASSED, FAILED, ABORTED) are displayed in the field beside the test description and in the test log. See “Viewing the test log” on page 54.

To select one or more tests, use the following procedure.

1. Open the corresponding test category.
2. Using the cursor movement keys, highlight the desired test.
3. Press the space bar. A selected test is marked by **>>**. Pressing the space bar again de-selects a test and removes the >>.
4. Repeat steps 2 and 3 above to select all desired tests.

Test results

Diagnostics test results produce the following error code format:

Function Code	Failure Type	DeviceID	Date	ChkDigits	Text

- **Function Code:**
  Represents the feature or function within the PC.
- **Failure Type:**
  Represents the type of error encountered.
- **DeviceID:**
  Contains the component's unit-ID that corresponds to either a fixed disk drive, removable media drive, serial or parallel port, processor, specific RIMM, or a device on the PCI bus.
- **Date:**
  Contains the date when the diagnostic test was run. The date is retrieved from CMOS and displayed using the YYYYMMDD format.
- **ChkDigits:**
  Contains a 2-digit check-digit value to ensure the following:
  - Diagnostics were run on the specified date.
  - Diagnostics were run on the specified computer.
  - The diagnostic error code is recorded correctly.
- **Text:**
  Description of the error.

Note: See “Diagnostic error codes” on page 62 for error code listings.

Quick and Full erase - hard drive

The diagnostics program offers two hard drive format utilities:

- Quick Erase Hard Drive
- Full Erase Hard Drive

Quick Erase Hard Drive provides a DOS utility that performs the following:

- Destroys the Master Boot Record (MBR) on the hard drive.
- Destroys all copies of the FAT Table on all partitions (both the master and backup).
- Destroys the partition table.
- Provides messages that warn the user that this is a non-recoverable process.

Full Erase Hard Drive provides a DOS utility that performs the following:

- Performs all the steps in Quick Erase.
- Provides a DOS utility that writes random data to all sectors of the hard drive.
- Provides an estimate of time to completion along with a visual representation of completion status.
- Provides messages that warn the user about non-recoverable process.

Important: Make sure that all data is backed up before using the Quick or Full Erase functions.

To select the Quick Erase or Full Erase Hard Drive utility. Do the following:

1. Select the UTILITY option on the toolbar and press Enter.
2. Select either the QUICK ERASE or FULL ERASE HARD DISK option and follow the instructions.

Viewing the test log

Errors reported by the diagnostic test will be displayed by the program as a failed test.

To view details of a failure or to view a list of test results, use the following procedure from any test category screen:

1. Press F3 to activate the log file.
2. Press F3 again to save the file to diskette or press F2 to print the file.

Chapter 6. Using the Setup Utility program

The Setup Utility program is used to view and change the configuration settings of your computer, regardless of which operating system you are using. However, the operating system settings might override any similar settings in the Setup Utility program.

Starting the Setup Utility program

To start the Setup Utility program, do the following:

1. Make sure your computer is turned off.
2. Repeatedly press and release the F1 key when turning on the computer. When you hear multiple beeps or see a logo screen, release the F1 key.

   Note: If a Power-On Password or an Administrator Password has been set, the Setup Utility program menu will not be displayed until you type the correct password. For more information, see “Using passwords” on page 57.

When the POST detects that the hard disk drive has been removed from your computer or the memory module size has decreased, an error message will be displayed when you start the computer and you will be prompted to do one of the following:

- Press F1 to enter the Setup Utility program.

  Note: After you enter the Setup Utility program, select **Save Changes and Exit** at the bottom of the screen. The error message will not be displayed again.
- Press F2 to bypass the error message and log in to the operating system.

Viewing and changing settings

The Setup Utility program menu lists various items about the system configuration. To view or change settings, start the Setup Utility program. See “Starting the Setup Utility program” on page 57. Then, follow the instructions on the screen.

You can use the keyboard to navigate through BIOS menu choices. The keys used to perform various tasks are displayed at the bottom of each screen.

Using passwords

By using the Setup Utility program, you can set passwords to prevent unauthorized access to your computer and data. The following types of passwords are available:

- Power-On Password
- Administrator Password
- Hard Disk Password

You do not have to set any passwords to use your computer. However, using passwords improves computing security. If you decide to set any passwords, read the following sections.

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Password considerations

A password can be any combination of up to 64 alphabetic and numeric characters. For security reasons, it is recommended to use a strong password that cannot be easily compromised. To set a strong password, use the following guidelines:

- Have at least eight characters in length
- Contain at least one alphabetic character and one numeric character
- Setup Utility program is not case sensitive
- Not be your name or your user name
- Not be a common word or a common name
- Be significantly different from your previous passwords

Power-On Password

When a Power-On Password is set, you are prompted to type a valid password each time the computer is turned on. The computer cannot be used until the valid password is typed in.

Hard Disk Password

Setting a Hard Disk Password prevents unauthorized access to the data on the hard disk drive. When a Hard Disk Password is set, you are prompted to type a valid password each time you try to access the hard disk drive.

Notes:

- After you set a Hard Disk Password, your data on the hard disk drive is protected even if the hard disk drive is removed from one computer and installed in another.
- If the Hard Disk Password is forgotten, there is no way to reset the password or recover data from the hard disk drive.

Administrator Password

Setting an Administrator Password deters unauthorized users from changing configuration settings. If you are responsible for maintaining the configuration settings of several computers, you might want to set an Administrator Password.

When an Administrator Password is set, you are prompted to type a valid password each time you try to access the Setup Utility program. The Setup Utility program cannot be accessed until a valid password is typed in.

If both the Power-On Password and Administrator Password are set, you can type either password. However, you must use your Administrator Password to change any configuration settings.

Setting, changing, and deleting a password

To set, change, or delete a password, do the following:

1. Start the Setup Utility program. See “Starting the Setup Utility program” on page 57.
2. From the Setup Utility program main menu, select **Security**.
3. Depending on the password type, select **Set Power-On Password**, **Set Administrator Password**, or **Hard Disk Password**.
4. Follow the instructions on the right side of the screen to set, change, or delete a password.

Note: A password can be any combination of up to 64 alphabetic and numeric characters. For more information, see “Password considerations” on page 58.

Enabling or disabling a device

This section provides information on how to enable or disable user access to the following devices:

USB Setup	Use this option to enable or disable a USB connector. When a USB connector is disabled, the device connected to the USB connector cannot be used.
SATA Controller	When this feature is set to **Disable**, all devices connected to the SATA connectors (such as hard disk drives or the optical drive) are disabled and cannot be accessed.

To enable or disable a device, do the following:

1. Start the Setup Utility program. See “Starting the Setup Utility program” on page 57.
2. From the Setup Utility program main menu, select **Devices**.
3. Depending on the device you want to enable or disable, do one of the following:
   - Select **USB Setup** to enable or disable a USB device.
   - Select **ATA Drive Setup** to enable or disable an internal or external SATA device.
4. Select the desired settings and press Enter.
5. Press F10 to save changes and exit the Setup Utility program. See “Exiting the Setup Utility program” on page 60.

Selecting a startup device

If your computer does not start up from a device such as the disc or hard disk drive as expected, do one of the following to select the startup device you want.

Selecting a temporary startup device

Use this procedure to select a temporary startup device.

Note: Not all discs and hard disk drives are bootable.

1. Turn off your computer.
2. Repeatedly press and release the F12 key when turning on the computer. When the Startup Device Menu window displays, release the F12 key.
3. Select the desired startup device and press Enter. The computer will start up from the device you selected.

Note: Selecting a startup device from the Startup Device Menu window does not permanently change the startup sequence.

Selecting or changing the startup device sequence

To view or permanently change the configured startup device sequence, do the following:

1. Start the Setup Utility program. See “Starting the Setup Utility program” on page 57.
2. From the Setup Utility program main menu, select **Startup**.
3. Select the devices for the Primary Startup Sequence, the Automatic Startup Sequence, and the Error Startup Sequence. Read the information displayed on the right side of the screen.
4. Press F10 to save changes and exit the Setup Utility program. See “Exiting the Setup Utility program” on page 60.

Exiting the Setup Utility program

After you finish viewing or changing settings, press Esc to return to the Setup Utility program main menu. You might have to press Esc several times. Do one of the following:

- If you want to save the new settings, press F10 to save changes and exit the Setup Utility program.
- If you do not want to save the settings, select **Exit → Discard Changes and Exit**, and then press Enter. When the Reset Without Saving window shows, select **Yes**, and then press Enter to exit the Setup Utility program.
- If you want to return to the default settings, press F9 to load the default settings, and then press F10 to save and exit the Setup Utility program.

Chapter 7. Symptom-to-FRU Index

The Symptom-to-FRU index lists error symptoms and possible causes. The most likely cause is listed first. Always begin with Chapter 4 “General Checkout” on page 33. This index can also be used to help you decide which FRUs to have available when servicing a computer. If you are unable to correct the problem using this index, go to “Undetermined problems” on page 82.

Notes:

- If you have both an error message and an incorrect audio response, diagnose the error message first.
- If you cannot run the diagnostic tests or you get a diagnostic error code when running a test, but did receive a POST error message, diagnose the POST error message first.
- If you did not receive any error message, look for a description of your error symptoms in the first part of this index.

Hard disk drive boot error

A hard disk drive boot error can have the following causes.

Error	FRU/Action
The start-up drive is not in the boot sequence in configuration.	Check the configuration and ensure the start-up drive is in the boot sequence.
No operating system installed on the boot drive.	Install an operating system on the boot drive.
The boot sector on the startup drive is corrupted.	The drive must be formatted. Do the following: 1. Attempt to back up the data on the failing hard disk drive. 2. Using the operating system programs, format the hard disk drive.
The drive is defective.	Replace the hard disk drive.

Power Supply Problems

If you suspect a power problem, use the following procedures.

Check/Verify	FRU/Action
Check the following for proper installation. • Power cord • On/Off switch connector • On/Off switch power supply connector • System board power supply connectors • Microprocessor(s) connection	Reseat connectors
Check the power cord for continuity.	Power cord
Check the power-on switch for continuity.	Power-on switch

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Diagnostic error codes

Refer to the following diagnostic error codes when using the diagnostic tests. See “Running tests” on page 53 for the specific type for information about the diagnostic programs.

In the following index, *X* can represent any number.

Diagnostic Error Code	FRU/Action
000-000-XXX BIOS Test Passed	No action
000-002-XXX BIOS Timeout	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
000-024-XXX BIOS Addressing test failure	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
000-025-XXX BIOS Checksum Value error	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
000-026-XXX FLASH data error	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
000-027-XXX BIOS Configuration/Setup error	1. Run the Setup Utility program. 2. Flash the system. See “Flash update procedures” on page 313. 3. System board
000-034-XXX BIOS Buffer Allocation failure	1. Reboot the system. 2. Flash the system. See “Flash update procedures” on page 313. 3. Run memory test 4. System board
000-035-XXX BIOS Reset Condition detected	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
000-036-XXX BIOS Register error	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
000-038-XXX BIOS Extension failure	1. Flash the system. See “Flash update procedures” on page 313. 2. Adapter card 3. System board
000-039-XXX BIOS DMI data error	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
000-195-XXX BIOS Test aborted by user	Information only Restart the test, if necessary
000-196-XXX BIOS test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.

Diagnostic Error Code	FRU/Action
000-197-XXX BIOS test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement 4. Replace the component under test.
000-198-XXX BIOS test aborted	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Flash the system and retest. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
000-199-XXX BIOS test failed, cause unknown	1. Go to “Undetermined problems” on page 82. 2. Flash the system and re-test. 3. Replace component under function test.
000-250-XXX BIOS APM failure	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
000-270-XXX BIOS ACPI failure	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
001-000-XXX System Test Passed	No action
001-00X-XXX System Error	System board
001-01X-XXX System Error	System board
001-024-XXX System Addressing test failure	System board
001-025-XXX System Checksum Value error	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
001-026-XXX System FLASH data error	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
001-027-XXX System Configuration/Setup error	1. Run the Setup Utility program. 2. Flash the system. See “Flash update procedures” on page 313. 3. System board
001-032-XXX System Device Controller failure	System board
001-034-XXX System Device Buffer Allocation failure	1. Reboot the system. 2. Flash the system. See “Flash update procedures” on page 313. 3. Run memory test. 4. System board
001-035-XXX System Device Reset condition detected	System board
001-036-XXX System Register error	System board

Diagnostic Error Code	FRU/Action
001-038-XXX System Extension failure	1. Adapter card 2. System board
001-039-XXX System DMI data structure error	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
001-040-XXX System IRQ failure	1. Power-off/on system and re-test. 2. System board
001-041-XXX System DMA failure	1. Power-off/on system and re-test. 2. System board
001-195-XXX System Test aborted by user	Information only Restart the test, if necessary
001-196-XXX System test halt, error threshold exceeded	1. Press F3 to review the log file 2. Restart the test to reset the log file
001-197-XXX System test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
001-198-XXX System test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Flash the system and retest. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
001-199-XXX System test failed, cause unknown	1. Go to “Undetermined problems” on page 82. 2. Flash the system and re-test. 3. Replace component under function test.
001-250-XXX System ECC error	System board
001-254-XXX 001-255-XXX 001-256-XXX 001-257-XXX System DMA error	System board
001-260-XXX 001-264-XXX System IRQ error	System board
001-268-XXX System IRQ1 failure	1. Device on IRQ1 2. System board
001-269-XXX System IRQ2 failure	1. Device on IRQ2 2. System board
001-270-XXX System IRQ3 failure	1. Device on IRQ3 2. System board
001-271-XXX System IRQ4 failure	1. Device on IRQ4 2. System board
001-272-XXX System IRQ5 failure	1. Device on IRQ5 2. System board

Diagnostic Error Code	FRU/Action
001-273-XXX System IRQ6 (diskette drive) failure	1. Diskette Cable 2. Diskette drive 3. System board
001-274-XXX System IRQ7 failure	1. Device on IRQ7 2. System board
001-275-XXX System IRQ8 failure	1. Device on IRQ8 2. System board
001-276-XXX System IRQ9 failure	1. Device on IRQ9 2. System board
001-277-XXX System IRQ10 failure	1. Device on IRQ10 2. System board
001-278-XXX System IRQ11 failure	1. Device on IRQ11 2. System board
001-279-XXX System IRQ12 failure	1. Device on IRQ12 2. System board
001-280-XXX System IRQ13 failure	1. Device on IRQ13 2. System board
001-281-XXX System IRQ14 (hard disk drive) failure	1. Hard disk drive cable 2. Hard disk drive 3. System board
001-282-XXX System IRQ15 failure	1. Device on IRQ15 2. System board
001-286-XXX 001-287-XXX 001-288-XXX System Timer failure	System board
001-292-XXX System CMOS RAM error	1. Run the Setup Utility program and re-test. 2. System board
001-293-XXX System CMOS Battery	1. CMOS Battery 2. System board
001-298-XXX System RTC date/time update failure	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
001-299-XXX System RTC periodic interrupt failure	System board
001-300-XXX System RTC Alarm failure	System board
001-301-XXX System RTC Century byte error	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
005-000-XXX Video Test Passed	No action
005-00X-XXX Video error	1. Video card, if installed 2. System board
005-010-XXX 005-011-XXX 005-012-XXX 005-013-XXX Video Signal failure	1. Video card, if installed 2. System board

Diagnostic Error Code	FRU/Action
005-016-XXX Video Simple Pattern test failure	1. Video Ram 2. Video card, if installed 3. System board
005-024-XXX Video Addressing test failure	1. Video card, if installed 2. System board
005-025-XXX Video Checksum Value error	1. Video card, if installed 2. System board
005-027-XXX Video Configuration/Setup error	1. Run the Setup Utility program. 2. Video drivers update 3. Video card, if installed 4. System board
005-031-XXX Video Device Cable failure	1. Video cable 2. Monitor 3. Video card, if installed 4. System board
005-032-XXX Video Device Controller failure	1. Video card, if installed 2. System board
005-036-XXX Video Register error	1. Video card, if installed 2. System board
005-038-XXX System BIOS extension failure	1. Video card, if installed 2. System board
005-040-XXX Video IRQ failure	1. Video card, if installed 2. System board
005-195-XXX Video Test aborted by user	Information only Restart the test, if necessary
005-196-XXX Video test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.
005-197-XXX Video test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test 3. Replace the component called out in warning statement. 4. Replace the component under test.
005-198-XXX Video test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
005-199-XXX Video test failed, cause unknown	1. Go to “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.

Diagnostic Error Code	FRU/Action
005-2XX-XXX 005-3XX-XXX Video subsystem error	1. Video card, if installed 2. System board
006-000-XXX Diskette interface Test Passed	No action
006-0XX-XXX Diskette interface error	1. Diskette drive Cable 2. Diskette drive 3. System board
006-195-XXX Diskette interface Test aborted by user	Information only Restart the test, if necessary
006-196-XXX Diskette interface test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.
006-197-XXX Diskette interface test warning	1. If a component is called out, make sure it is connected and/or enabled. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
006-198-XXX Diskette interface test aborted	1. If a component is called out, make sure it is connected and/or enabled. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
006-199-XXX Diskette interface test failed, cause unknown	1. Go to “Undetermined problems” on page 82. 2. Flash the system and re-test. 3. Replace component under function test.
006-25X-XXX Diskette interface Error	1. Diskette drive cable 2. Diskette drive 3. System board
011-000-XXX Serial port Interface Test Passed	No action
011-001-XXX Serial port Presence	1. Remove external serial device, if present. 2. Run the Setup Utility program, enable port. 3. System board
011-002-XXX 011-003-XXX Serial port Timeout/Parity error	System board
011-013-XXX 011-014-XXX Serial port Control Signal/Loopback test failure	System board
011-015-XXX Serial port External Loopback failure	1. Wrap plug 2. System board
011-027-XXX Serial port Configuration/Setup error	1. run the Setup Utility program, enable port 2. Flash the system. See “Flash update procedures” on page 313. 3. System board
011-03X-XXX 011-04X-XXX Serial port failure	System board
011-195-XXX Serial port Test aborted by user	Information only Restart the test, if necessary.

Diagnostic Error Code	FRU/Action
011-196-XXX Serial port test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.
011-197-XXX Serial port test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
011-198-XXX Serial port test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
011-199-XXX Serial port test failed, cause unknown	1. Go to “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.
011-2XX-XXX Serial port signal failure	1. External serial device 2. System board
014-000-XXX Parallel port Interface Test Passed	No action
014-001-XXX Parallel port Presence	1. Remove external parallel device, if present. 2. Run the Setup Utility program, enable port 3. System board
014-002-XXX 014-003-XXX Parallel port Timeout/Parity error	System board
014-013-XXX 014-014-XXX Parallel port Control Signal/Loopback test failure	System board
014-015-XXX Parallel port External Loopback failure	1. Wrap plug 2. System board
014-027-XXX Parallel port Configuration/Setup error	1. Run the Setup Utility program, enable port 2. Flash the system. See “Flash update procedures” on page 313. 3. System board
014-03X-XXX 014-04X-XXX Parallel port failure	System board
014-195-XXX Parallel port Test aborted by user	Information only Restart the test, if necessary.
014-196-XXX Parallel port test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.

Diagnostic Error Code	FRU/Action
014-197-XXX Parallel port test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
014-198-XXX Parallel port test aborted	1. If a component is called out, make sure it is connected and/or enabled. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
014-199-XXX Parallel port test failed, cause unknown	1. Go to “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.
014-2XX-XXX 014-3XX-XXX Parallel port failure	1. External parallel device 2. System board
015-000-XXX USB port Interface Test Passed	No action
015-001-XXX USB port Presence	1. Remove USB device(s) and re-test. 2. System board
015-002-XXX USB port Timeout	1. Remove USB device(s) and re-test. 2. System board
015-015-XXX USB port External Loopback failure	1. Remove USB device(s) and re-test. 2. System board
015-027-XXX USB port Configuration/Setup error	1. Flash the system. See “Flash update procedures” on page 313. 2. System board
015-032-XXX USB port Device Controller failure	System board
015-034-XXX USB port buffer allocation failure	1. Reboot the system 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Run memory test. 4. System board
015-035-XXX USB port Reset condition detected	1. Remove USB device(s) and re-test. 2. System board
015-036-XXX USB port Register error	System board
015-040-XXX USB port IRQ failure	1. Run the Setup Utility program and check for conflicts. 2. Flash the system. See “Flash update procedures” on page 313. 3. System board
015-195-XXX USB port Test aborted by user	Information only Restart the test, if necessary.

Diagnostic Error Code	FRU/Action
015-196-XXX USB port test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.
015-197-XXX USB port test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
015-198-XXX USB port test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
015-199-XXX USB port test failed, cause unknown	1. Go to “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.
018-000-XXX PCI Card Test Passed	No action
018-0XX-XXX PCI Card Failure	1. Riser card, if installed. 2. System board
018-195-XXX PCI Card Test aborted by user	1. PCI card 2. Information only Restart the test, if necessary
018-196-XXX PCI Card test halt, error threshold exceeded	1. Press F3 to review the log file 2. Restart the test to reset the log file
018-197-XXX PCI Card test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
018-198-XXX PCI Card test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
018-199-XXX PCI Card test failed, cause unknown	1. Go to “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.

Diagnostic Error Code	FRU/Action
018-250-XXX PCI Card Services error	1. PCI card 2. Riser card, if installed. 3. System board
020-000-XXX PCI Interface Test Passed	No action
020-0XX-XXX PCI Interface error	1. PCI card 2. Riser card, if installed. 3. System board
020-195-XXX PCI Test aborted by user	Information only Restart the test, if necessary
020-196-XXX PCI test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.
020-197-XXX PCI test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
020-198-XXX PCI test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
020-199-XXX PCI test failed, cause unknown	1. Go to “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.
020-262-XXXPCI system error	1. PCI card 2. Riser card, if installed. 3. System board
025-000-XXXIDE interface Test Passed	No action
025-00X-XXX 025-01X-XXX IDE interface failure	1. IDE signal cable 2. Check power supply voltages. 3. Reseat IDE signal cable. 4. IDE device 5. System board
025-027-XXX IDE interface Configuration/Setup error	1. IDE signal cable 2. Flash the system. See “Flash update procedures” on page 313. 3. Reseat IDE signal cable. 4. IDE device 5. System board

Diagnostic Error Code	FRU/Action
025-02X-XXX 025-03X-XXX 025-04X-XXX IDE Interface failure	1. IDE signal cable 2. Check power supply. 3. Reseat IDE signal cable. 4. IDE device 5. System board
025-195-XXX IDE interface Test aborted by user	Information only Restart the test, if necessary.
025-196-XXX IDE interface test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.
025-197-XXX IDE interface test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
025-198-XXX IDE interface test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
025-199-XXX IDE interface test failed, cause unknown	1. Go to “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.
030-000-XXX SCSI interface Test Passed	No action
030-00X-XXX 030-01X-XXX SCSI interface failure	1. SCSI signal cable 2. Check power supply 3. SCSI device 4. SCSI adapter card, if installed. 5. System board
030-027-XXX SCSI interface Configuration/Setup error	1. SCSI signal cable 2. Flash the system. See “Flash update procedures” on page 313. 3. SCSI device 4. SCSI adapter card, if installed. 5. System board
030-03X-XXX 030-04X-XXX SCSI interface error	1. SCSI signal cable 2. Check power supply 3. SCSI device 4. SCSI adapter card, if installed. 5. System board
030-195-XXX SCSI interface Test aborted by user	Information only Restart the test, if necessary.

Diagnostic Error Code	FRU/Action
030-196-XXX SCSI interface test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.
030-197-XXX SCSI interface test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
030-198-XXX SCSI interface test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
030-199-XXX SCSI interface test failed, cause unknown	1. Go to “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.
035-000-XXX RAID interface Test Passed	No action
035-0XX-XXX RAID interface Failure	1. RAID signal cable 2. RAID device 3. RAID adapter card, if installed 4. System board
035-195-XXX RAID interface Test aborted by user	Information only Restart the test, if necessary.
035-196-XXX RAID interface test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.
035-197-XXX RAID interface test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
035-198-XXX RAID interface test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
035-199-XXX RAID interface test failed, cause unknown	1. See “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.
071-000-XXX Audio port Interface Test Passed	No action

Diagnostic Error Code	FRU/Action
071-00X-XXX 071-01X-XXX 071-02X-XXX Audio port error	1. Run the Setup Utility program. 2. Flash the system. See “Flash update procedures” on page 313. 3. System board
071-03X-XXX Audio port failure	1. Speakers 2. Microphone 3. Audio card, if installed. 4. System board
071-04X-XXX Audio port failure	1. Run the Setup Utility program. 2. Audio card, if installed. 3. System board
071-195-XXX Audio port Test aborted by user	Information only Restart the test, if necessary.
071-196-XXX Audio port test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.
071-197-XXX Audio port test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
071-198-XXX Audio port test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
071-199-XXX Audio port test failed, cause unknown	1. See “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.
071-25X-XXX Audio port failure	1. Speakers 2. Audio card, if installed 3. System board
080-000-XXX Game Port interface Test Passed	No action
080-XXX-XXX Game Port interface Error	1. Remove the game port device and re-test the system.
080-195-XXX Game Port interface Test aborted by user	Information only Restart the test, if necessary.
080-196-XXX Game Port interface test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.

Diagnostic Error Code	FRU/Action
080-197-XXX Game Port interface test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
080-198-XXX Game Port interface test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
080-199-XXX Game Port interface test failed, cause unknown	1. See “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.
086-000-XXX Mouse Port interface Test Passed	No action
086-001-XXX Mouse Port interface Presence	1. Mouse 2. System board
086-032-XXX Mouse Port interface Device controller failure	1. Mouse 2. System board
086-035-XXX Mouse Port interface Reset	1. Mouse 2. System board
086-040-XXX Mouse Port interface IRQ failure	1. Run the Setup Utility program. 2. Mouse 3. System board
086-195-XXX Mouse Port interface Test aborted by user	Information only Restart the test, if necessary.
086-196-XXX Mouse Port interface test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.
086-197-XXX Mouse Port interface test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
086-198-XXX Mouse Port interface test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.

Diagnostic Error Code	FRU/Action
086-199-XXX Mouse Port interface test failed, cause unknown	1. See “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.
089-000-XXX Microprocessor Test Passed	No action
089-XXX-XXX Microprocessor failure	1. Microprocessor(s) 2. System board
089-195-XXX Microprocessor Test aborted by user	Information only Restart the test, if necessary.
089-196-XXX Microprocessor test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.
089-197-XXX Microprocessor test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
089-198-XXX Microprocessor test aborted	1. Flash the system. See “Flash update procedures” on page 313. 2. Go to “Undetermined problems” on page 82.
089-199-XXX Microprocessor test failed, cause unknown	1. See “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.
170-000-XXX Voltage Sensor(s) Test Passed	No action
170-0XX-XXX Voltage Sensor(s) failure	1. Flash system 2. System board
170-195-XXX Voltage Sensor(s) Test aborted by user	Information only Restart the test, if necessary.
170-196-XXX Voltage Sensor(s) test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.
170-197-XXX Voltage Sensor(s) test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
170-198-XXX Voltage Sensor(s) test aborted	1. If a component is called out, make sure it is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.

Diagnostic Error Code	FRU/Action
170-199-XXX Voltage Sensor(s) test failed, cause unknown	1. See “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.
170-250-XXX 170-251-XXX Voltage Sensor(s) Voltage limit error	1. Power supply 2. System board
170-254-XXX Voltage Sensor(s) Voltage Regulator Module error	1. Voltage Regulator Module (VRM) 2. Microprocessor 3. System board
175-000-XXX Thermal Sensor(s) Test Passed	No action
175-0XX-XXX Thermal Sensor(s) failure	1. Flash system 2. System board
175-195-XXX Thermal Sensor(s) Test aborted by user	Information only Restart the test, if necessary.
175-196-XXX Thermal Sensor(s) test halt, error threshold exceeded	1. Press F3 to review the log file. 2. Restart the test to reset the log file.
175-197-XXX Thermal Sensor(s) test warning	1. Make sure the component that is called out is connected and/or enabled. See Chapter 6 “Using the Setup Utility program” on page 57. 2. Re-run test. 3. Replace the component that is called out in warning statement. 4. Replace the component under test.
175-198-XXX Thermal Sensor(s) test aborted	1. If a component is called out, make sure it is connected and/or enabled . 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Go to “Undetermined problems” on page 82.
175-199-XXX Thermal Sensor(s) test failed, cause unknown	1. See “Undetermined problems” on page 82. 2. Flash the system and re-test. See “Flash update procedures” on page 313. 3. Replace component under function test.
175-250-XXX 175-251-XXX Thermal Sensor(s) limit error	1. Check fans 2. Check power supply voltages. 3. Microprocessor 4. System board
185-000-XXX Asset Security Test Passed	No action
185-XXX-XXX Asset Security failure	1. Flash system 2. System board
185-278-XXX Asset Security Chassis Intrusion	1. Assure Asset Security Enabled 2. C2 Cover Switch 3. System board
201-000-XXX System Memory Test Passed	No action

Diagnostic Error Code	FRU/Action
201-XXX-XXX System Memory error	1. Replace the memory module called out by the test. 2. System board
202-000-XXX System Cache Test Passed	No action
202-XXX-XXX System Cache error	1. Cache, if removable 2. System board 3. Microprocessor
206-000-XXX Diskette Drive Test Passed	No action
206-XXX-XXX Diskette Drive error	1. Diskette Drive Cable 2. Check power supply voltages 3. Diskette drive 4. System board
215-000-XXX CD-ROM Drive Test Passed	No action
215-XXX-XXX CD-ROM Drive error	1. CD-ROM Drive Cable 2. Check power supply voltages 3. CD-ROM drive 4. System board
217-000-XXX Hard Disk Drive Test Passed	No action
217-25X-XXX 217-26X-XXX Hard Disk Drive (IDE) error	1. Hard Disk Drive Cable 2. Check power supply voltages 3. Reseat the hard disk drive cable 4. Hard Disk drive (IDE) 5. System board
217-28X-XXX 217-29X-XXX Hard Disk Drive (SCSI) error	1. Hard Disk Drive Cable 2. Check power supply voltages 3. Reseat the hard disk drive cable 4. Hard Disk drive (SCSI) 5. SCSI adapter card 6. System board
220-000-XXX Hi-Capacity Cartridge Drive Test Passed	No action
220-XXX-XXX Hi-Capacity Cartridge Drive error	1. Remove the Hi-Capacity Cartridge Drive and re-test the system.
301-XXX-XXX Keyboard error	1. Keyboard 2. Check and test mouse. 3. System board
301-000-XXX Keyboard Test Passed	No action
302-000-XXX Mouse Test Passed	No action
302-XXX-XXX Mouse error	1. Mouse 2. Check and test Keyboard. 3. System board
303-000-XXX Joystick Test Passed	No action
303-XXX-XXX Joystick error	Remove the Joystick and re-test the system.

Diagnostic Error Code	FRU/Action
305-000-XXX Monitor DDC Test Passed	No action
305-250-XXX Monitor DDC self test failure	1. Run the Setup Utility program to enable DDC. 2. Cable 3. Monitor 4. Video card 5. System board
415-000-XXX Modem Test Passed	No action
415-XXX-XXX Modem error	Remove the Modem and re-test the system.

Beep symptoms

Beep symptoms are tones or a series of tones separated by pauses (intervals without sound) during POST.

The following tables describes beep symptoms.

Beep Symptom	FRU/Action
2 short beeps CMOS setting error	Common error code, see the detail failure information in “POST error codes” on page 79.
3 short and 1 long beeps DRAM memory error	Perform the following actions in order. 1. Make sure the memory module(s) are properly seated in the connector(s). 2. Replace the memory module(s). 3. Replace the system board.

POST error codes

Each time you power-on the system, it performs a series of tests that check the operation of the system and some options. This series of tests is called the *Power-On Self-Test*, or *POST*. POST does the following operations.

- Checks some basic system-board operations
- Checks the memory operation
- Starts the video operation
- Verifies that the boot drive is working

If the POST detects a problem, an error message appears on the screen. A single problem can cause several error messages to appear. When you correct the cause of the first error message, the other error messages probably will not appear on the screen the next time you turn on the system.

Error code	POST Error Message	Description/Action
0135	Fan failure	The system might be overheating. Press F1 to enter Setup, F2 to resume. **Note:** If the problem is caused by the microprocessor fan, press F10 will not solve the problem.
0211	Keyboard not found	When there is no keyboard detected, the error message will be displayed.
0164	Memory size decreased	Press F1 to enter Setup, F2 to resume.
1762	Configuration change has occurred	This error message is displayed when a hard disk drive or optical drive change has been made. Press F1 to enter Setup, F2 to resume.
1962	No operating system found. Press any key to repeat boot sequence.	This error occurs only after the POST is completed. Press any key to repeat boot sequence.

Miscellaneous error conditions

Message/Symptom	FRU/Action
Changing display colors	**Display/Monitor**
Computer will *not* power-off. See “Hard disk drive boot error” on page 61.	1. Power Switch 2. System Board 3. Riser card, if installed.
Computer will *not* RPL from server	1. Ensure that network is in startup sequence as first device or first device after diskette. 2. Ensure that network adapter is enabled for RPL. 3. Network adapter (Advise network administrator of new MAC address)
Computer will *not* perform a Wake On LAN® (if applicable)	1. Check power supply and signal cable connections to network adapter. 2. Ensure that the operating system settings are set to enable Wake on LAN. 3. Ensure Wake On LAN feature is enabled in Setup/Configuration (see “Starting the Setup Utility program” on page 57) 4. Ensure network administrator is using correct MAC address. 5. Ensure no interrupt or I/O address conflicts. 6. Network adapter (advise network administrator of new MAC address)
Dead computer. See “Hard disk drive boot error” on page 61.	1. Power Supply 2. System Board

Message/Symptom	FRU/Action
Diskette drive in-use light remains on or does not light when drive is active.	1. Diskette Drive 2. System Board 3. Diskette Drive Cable
Blank screen except for flashing cursor.	1. System Board 2. Primary Hard Disk Drive 3. Hard Disk Drive Cable
Incorrect memory size during POST	1. Run the Memory tests. 2. Memory Module 3. System Board
"Insert a Diskette" icon appears with a known-good diagnostics diskette in the first 3.5-inch diskette drive.	1. System Board 2. Diskette Drive Cable 3. Network Adapter
Intensity or color varies from left to right of characters and color bars	1. Display 2. Video adapter (if present) 3. System Board
No power or fan not running	1. See “Hard disk drive boot error” on page 61.
Non-system disk or disk error-type message with a known-good diagnostic diskette.	1. Diskette Drive 2. System Board 3. Diskette Drive Cable
Other display symptoms not listed above (including blank or illegible display)	1. Display 2. System Board
Power-on indicator or hard disk drive in-use light not on, but computer works correctly	1. Power switch/LED assembly 2. System Board
Printer problems	1. Printer 2. System Board
Program loads from the hard disk with a known-good diagnostics diskette in the first 3.5-inch diskette drive	1. Run the Setup Utility program and check Startup sequence. 2. Diskette Drive 3. Diskette Drive Cable 4. System Board 5. Power Supply
RPL computer cannot access programs from its own hard disk.	1. If network administrator is using LCCM Hybrid RPL, check startup sequence: a. **First device - network** b. **Second device - hard disk** 2. Hard disk drive
RPL computer does not RPL from server	1. Check startup sequence. 2. Check the network adapter LED status.
Serial or parallel port device failure (system board port)	1. External Device Self-Test OK? 2. External Device 3. Cable 4. System Board

Message/Symptom	FRU/Action
Serial or parallel port device failure (adapter port)	1. External Device Self-Test OK? 2. External Device 3. Cable 4. Alternate Adapter 5. System Board
Some or all keys on the keyboard do not work	1. Keyboard 2. Keyboard Cable 3. System Board

Undetermined problems

This section provides instructions on how to find out the failing devices or adapters.

1. Power-off the computer.
2. Remove or disconnect the following components (if installed) one at a time.
   a. External devices (modem, printer, or mouse)
   b. Any adapters
   c. Memory modules
   d. Extended video memory
   e. External Cache
   f. External Cache RAM
   g. Hard disk drive
   h. Diskette drive
3. Power-on the computer to re-test the system.
4. Repeat steps 1 through 3 until you find the failing device or adapter.

If all devices and adapters have been removed, and the problem continues, replace the system board.

Chapter 8. Replacing FRUs

This chapter provides removal or replacement procedures for major FRUs. Not all FRUs are documented.

Important

Before you replace any FRU, read Chapter 2 “Safety information” on page 3. These precautions and guidelines will help you work safely.

FRU replacements are to be done by trained service technicians only.

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Locating connectors, controls, and indicators on the front of your computer

Figure 1 “Front connector, control, and indicator locations” on page 84 shows the locations of the connectors, controls, and indicators on the front of your computer.

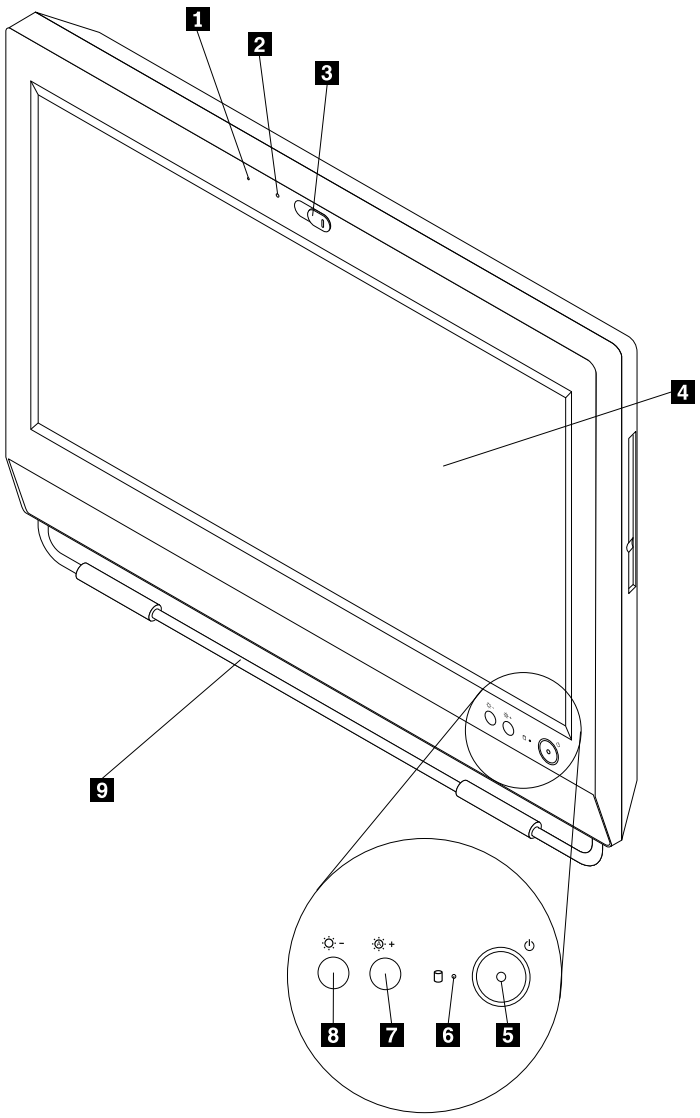


Figure 1. Front connector, control, and indicator locations

1 Integrated Microphone
2 Integrated camera indicator
3 Integrated camera block shield
4 Liquid crystal display (LCD) panel
5 Power switch
6 Hard disk drive activity indictor
7 Brightness-up / Auto-adjusting control [1]
8 Brightness-down control
9 Foot stand

Locating connectors on the rear of your computer

Figure 2 “Rear connector locations” on page 85 shows the locations of the connectors on the rear of your computer. Some connectors on the rear of your computer are color-coded to help you determine where to connect the cables on your computer.

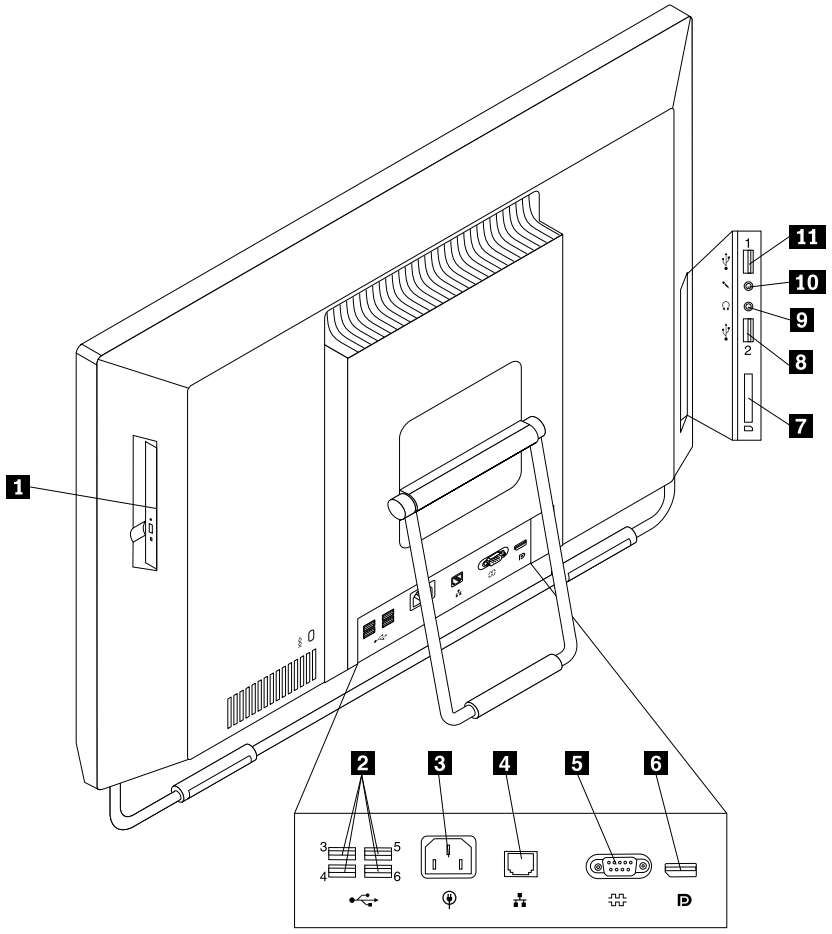


Figure 2. Rear connector locations

1 Optical drive
2 USB connector (4)
3 Power cord connector
4 Ethernet connector
5 Serial port
6 DisplayPort connector
7 Card reader
8 USB connector
9 Headphone connector
10 Microphone connector
11 USB connector

FRU locations

The following illustration shows the locations of the FRUs.

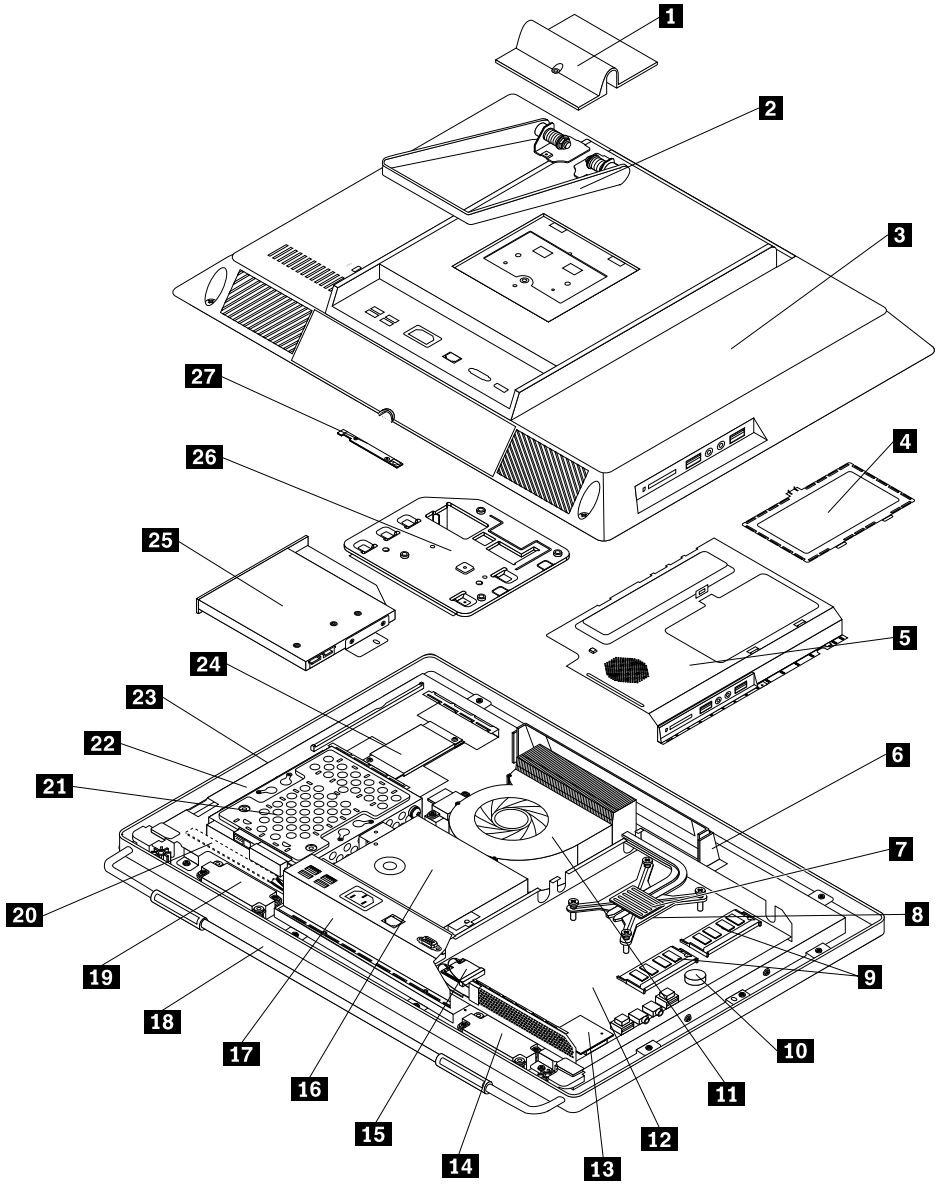


Figure 3. FRU locations

1 System stand hinge cover
2 System stand
3 Computer cover
4 System board shield window
5 System board shield
6 Handle bar
15 WI-FI connector
16 Power supply
17 Rear I/O connector
18 Frame stand
19 Internal speaker
20 Control button board

7 Heat sink assembly
8 Microprocessor
9 Memory module
10 Battery
11 Microprocessor fan
12 System board
13 Card reader
14 Internal speaker
21 Hard disk drive
22 LCD bracket
23 LCD panel
24 Inverter
25 Optical drive
26 VESA mount bracket
27 Integrated camera

System board parts and connectors

The following illustration shows the locations of the system board parts and connectors.

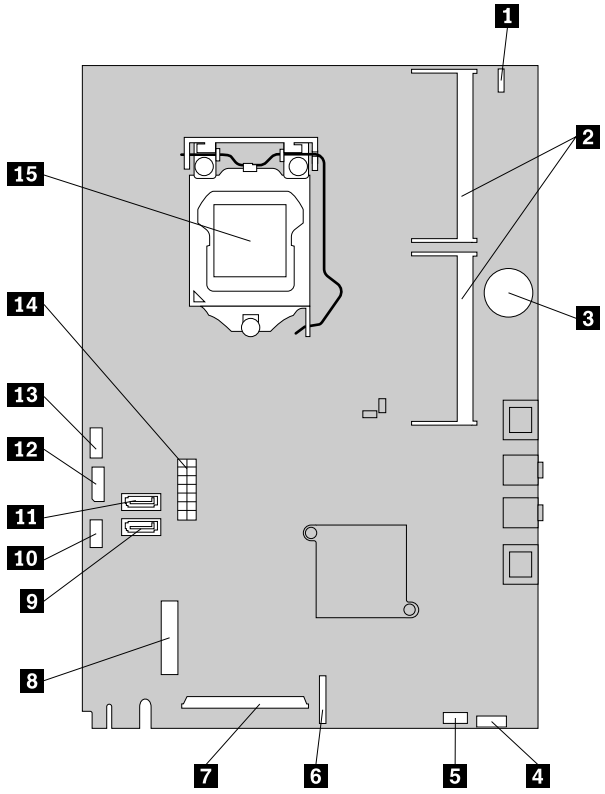


Figure 4. System board part and connector locations

1 Integrated camera cable connector
2 Memory slots (2)
3 Battery
4 Card reader connector
5 Internal speaker cable connector
6 Control button connector
7 LCD panel connector
8 WI-FI connector
9 SATA connector
10 Microprocessor fan connector
11 SATA connector
12 Optical drive power connector/Hard disk drive power connector
13 Inverter connector
14 Power supply connector
15 Microprocessor

Removing and reinstalling the system stand hinge cover

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to remove and reinstall the system stand hinge cover.

CAUTION:

Turn off the computer and wait three to five minutes to let the computer cool before removing the system stand hinge cover.

To remove and reinstall the system stand hinge cover, do the following:

1. Remove any media from the drives and turn off all attached devices and the computer.
2. Disconnect all power cords from electrical outlets.
3. Disconnect the power cords, Input/Output cables, and any other cables that are connected to the computer. See “Locating connectors, controls, and indicators on the front of your computer” on page 84 and “Locating connectors on the rear of your computer” on page 85.
4. Place a soft, clean towel or cloth on the desk or surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
5. Remove the screw that secures the system stand hinge cover, and then lift the system stand hinge cover up and remove it from the computer.

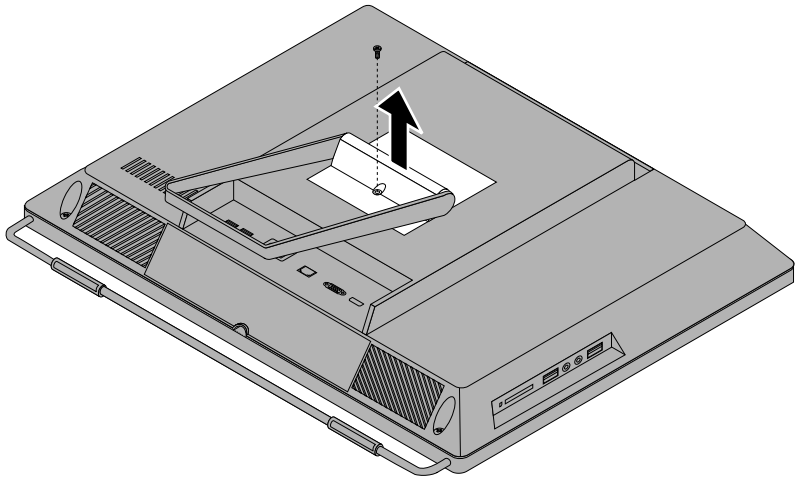


Figure 5. Removing the system stand hinge cover

6. To reinstall the system stand hinge cover, place the system stand hinge cover on the computer so that the two plastic tabs on the hinge cover align with the corresponding holes in the computer.

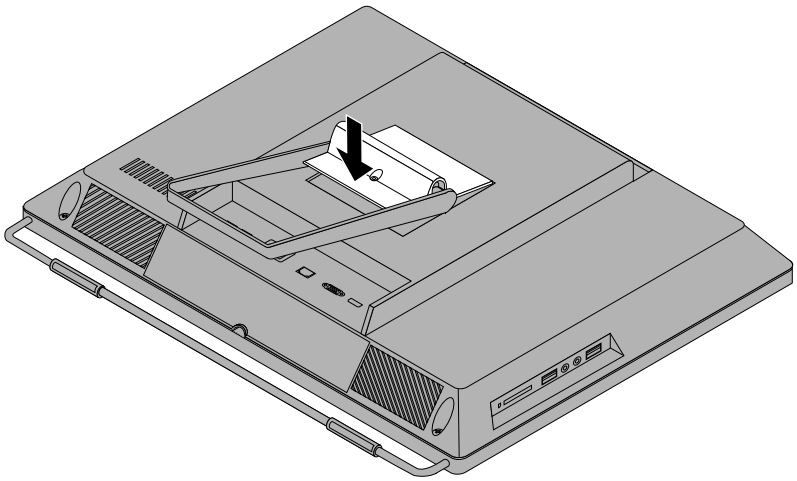


Figure 6. Reinstalling the system stand hinge cover

7. Reinstall the screw to secure the system stand hinge cover to the computer.

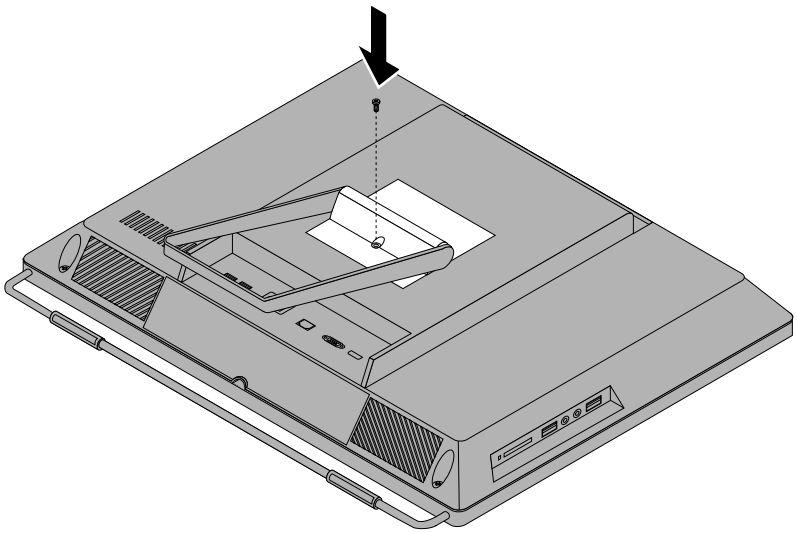


Figure 7. Reinstalling the screw to secure the system stand hinge cover to the computer

Removing and reinstalling the system stand

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to remove and reinstall the system stand.

To remove and reinstall the system stand, do the following:

1. Turn off the computer and disconnect all power cords from electrical outlets.
2. Remove the system stand hinge cover. See “Removing and reinstalling the system stand hinge cover” on page 88.
3. Remove the two screws that secure the system stand, and then lift the system stand up and remove it from the computer.

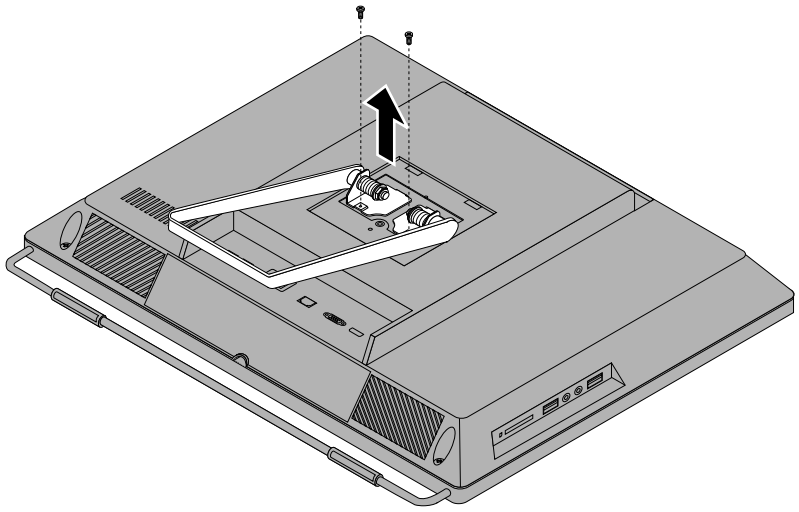


Figure 8. Removing the system stand

4. To reinstall the system stand, align the two screw holes with the corresponding holes in the chassis, and then install the two screws to secure the system stand to the computer.

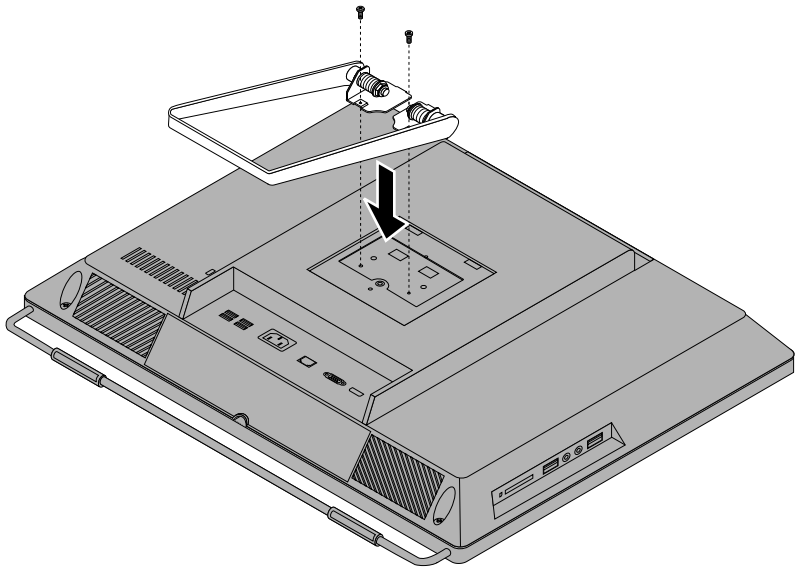


Figure 9. Reinstalling the system stand

5. Reinstall the system stand hinge cover. See “Removing and reinstalling the system stand hinge cover” on page 88.

Removing and reinstalling the frame stand

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to remove and reinstall the frame stand.

CAUTION:

Turn off the computer and wait three to five minutes to let the computer cool before removing the frame stand.

To remove and reinstall the frame stand, do the following:

1. Remove any media from the drives and turn off all attached devices and the computer.
2. Disconnect all power cords from electrical outlets.
3. Disconnect the power cords, Input/Output cables, and any other cables that are connected to the computer. See “Locating connectors, controls, and indicators on the front of your computer” on page 84 and “Locating connectors on the rear of your computer” on page 85.
4. Place a soft, clean towel or cloth on the desk or the surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
5. Remove the four screws that secure the frame stand, and then pull the frame stand out of the computer.

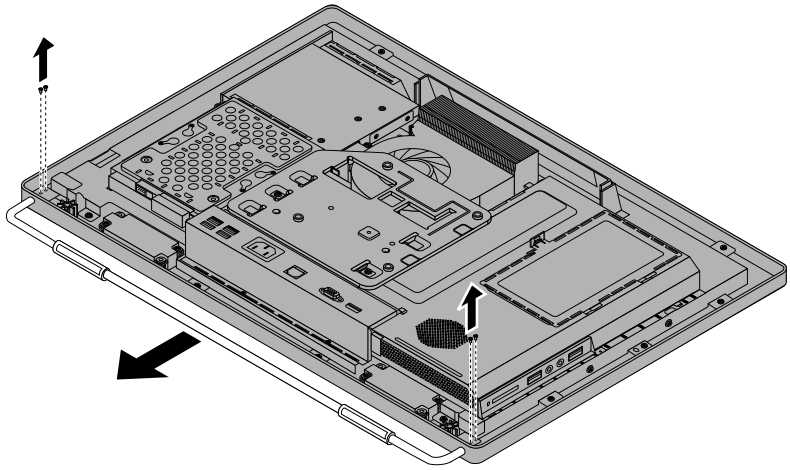


Figure 10. Removing the frame stand

6. To reinstall the frame stand, place the frame stand on the computer so that the screw hole aligns with the corresponding hole in the computer.

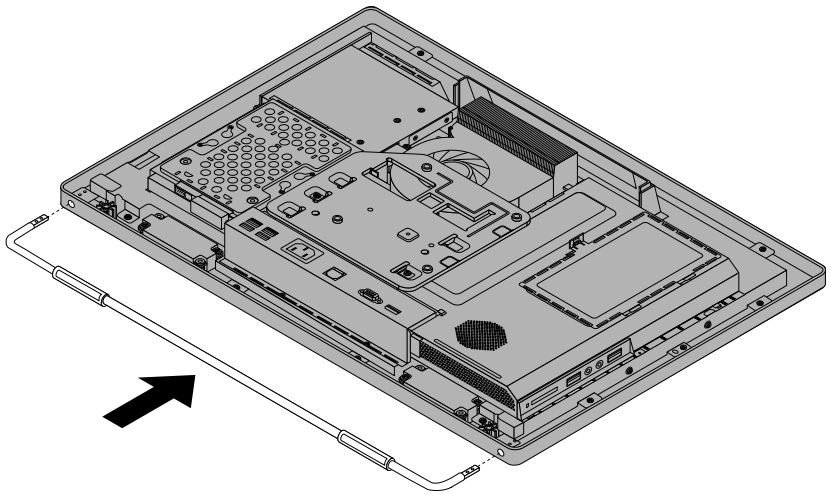
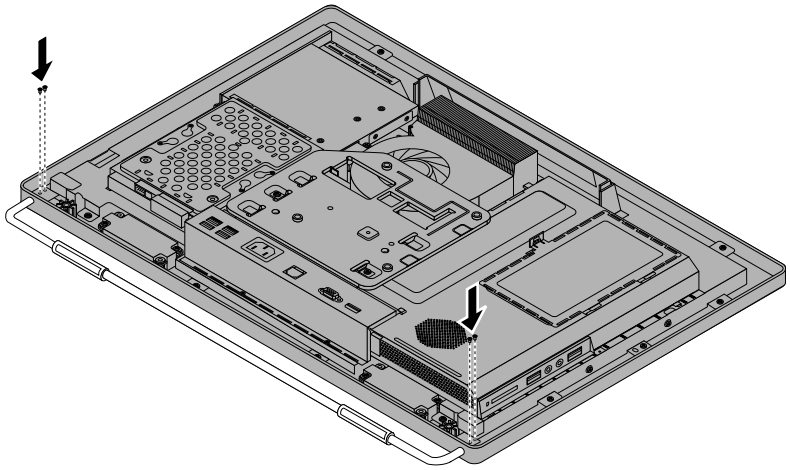


Figure 11. Reinstalling the frame stand to the computer

7. Reinstall the four screws to secure the frame stand to the computer.



Removing the computer cover

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to remove the computer cover.

CAUTION:

Turn off the computer and wait three to five minutes to let the computer cool before removing the computer cover.

To remove the computer cover, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove any locking device that secures the computer cover, such as an integrated cable lock.
4. Remove the system stand. See “Removing and reinstalling the system stand” on page 90.
5. Loosen the two screws 1 at the bottom of the computer. Put your index finger or thumb in the finger slot 2 , and then lift the computer cover up to remove it from the computer.

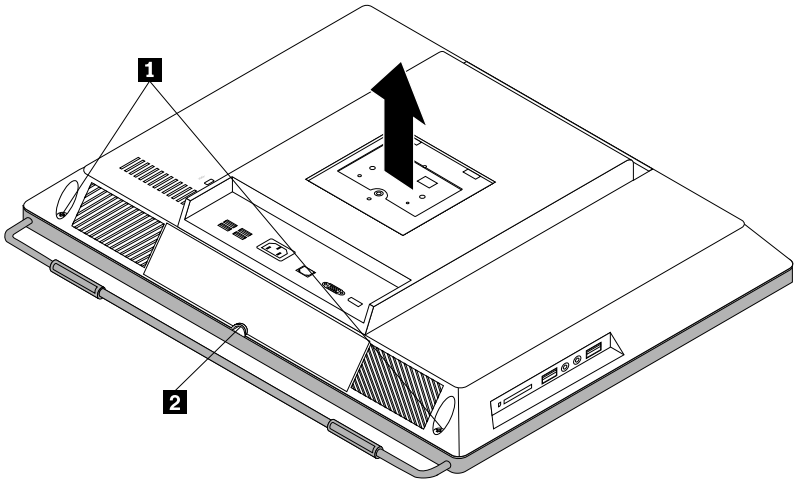


Figure 12. Removing the computer cover

Replacing the hard disk drive

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy

of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the hard disk drive.

To replace the hard disk drive, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Remove the computer cover. See “Removing the computer cover” on page 94.
3. Locate the hard disk drive in the computer. See “FRU locations” on page 86.
4. Remove the screw that secures the hard disk drive.

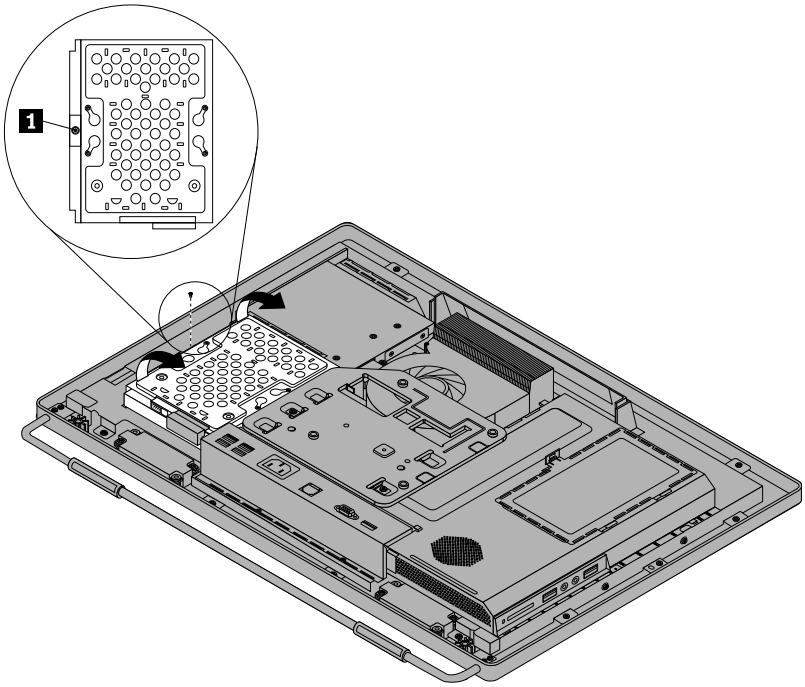


Figure 13. Removing the screw that secures the hard disk drive

5. Disconnect the hard disk drive cable and slide the hard disk drive out of the chassis.

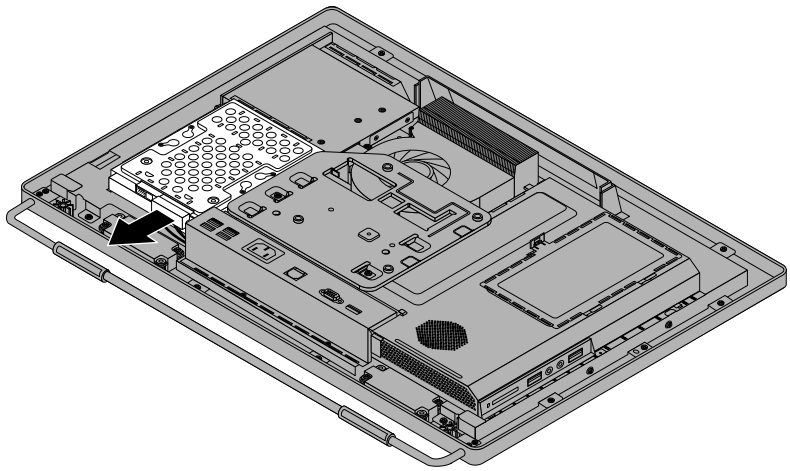


Figure 14. Removing the hard disk drive

6. Remove the four screws on the hard disk drive bracket, then remove the hard disk drive out of the bracket. Do not touch the circuit board on the bottom of the hard disk drive.

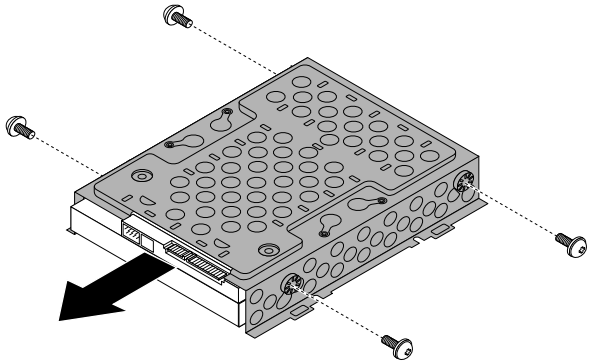


Figure 15. Removing the hard disk drive out of the bracket

7. To install the new hard disk drive into the bracket, position the hard disk drive so that the four screw holes align with those in the bracket.
8. Install the four screws that secure the hard disk drive to the hard disk drive bracket.
9. Connect the hard disk drive cable.
10. Slide the new hard disk drive with the bracket into the hard disk drive bay. Align the screw hole in the hard disk drive with that in the chassis.
11. Install the screw to secure the hard disk drive bracket to the chassis.
12. Go to “Completing the parts replacement” on page 124.

Replacing the optical drive

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the optical drive.

Note: The optical drive is available only in some models.

To replace the optical drive, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Locate the optical drive. See “FRU locations” on page 86.
5. Remove the screw **1** that secures the optical drive, and then slide the optical drive to disconnect the optical drive from the optical drive cable. Remove the optical drive out of the optical drive bay.

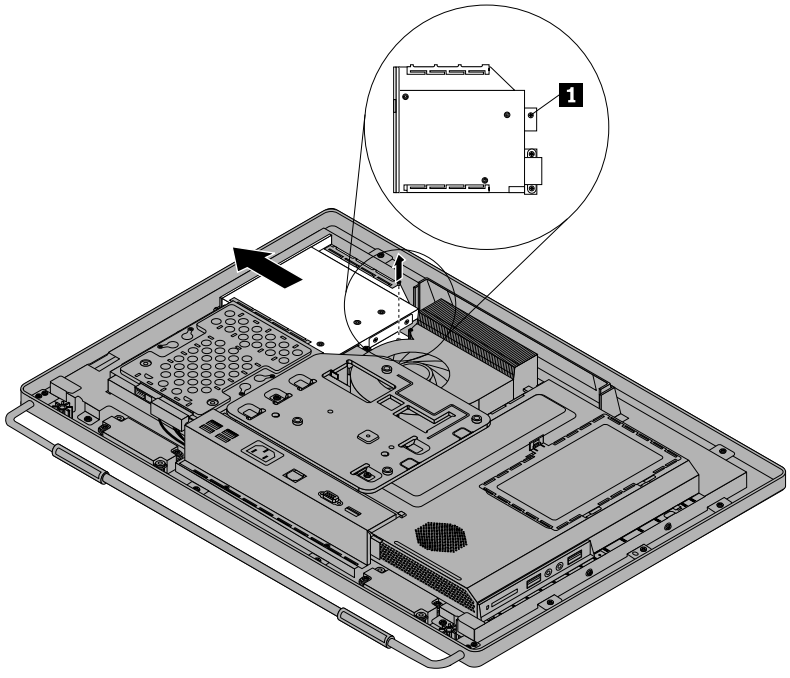


Figure 16. Removing the optical drive

6. To install a new optical drive, slide the new optical drive into the optical drive bay to connect the cable to the optical drive.

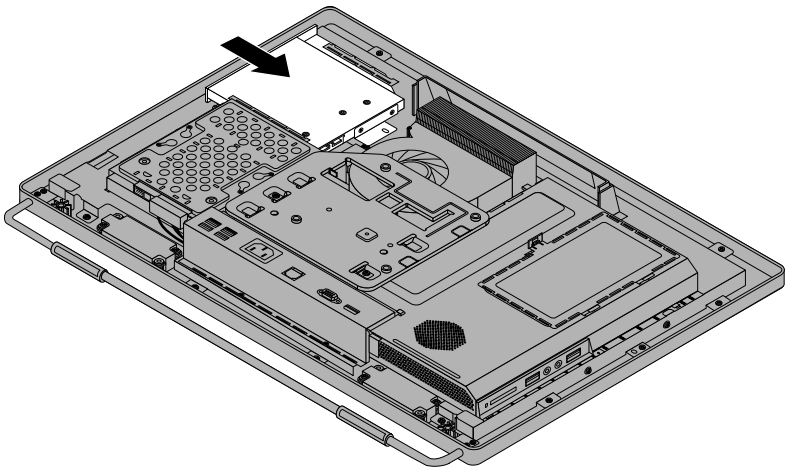


Figure 17. Installing the optical drive

7. Install the screw to secure the optical drive.

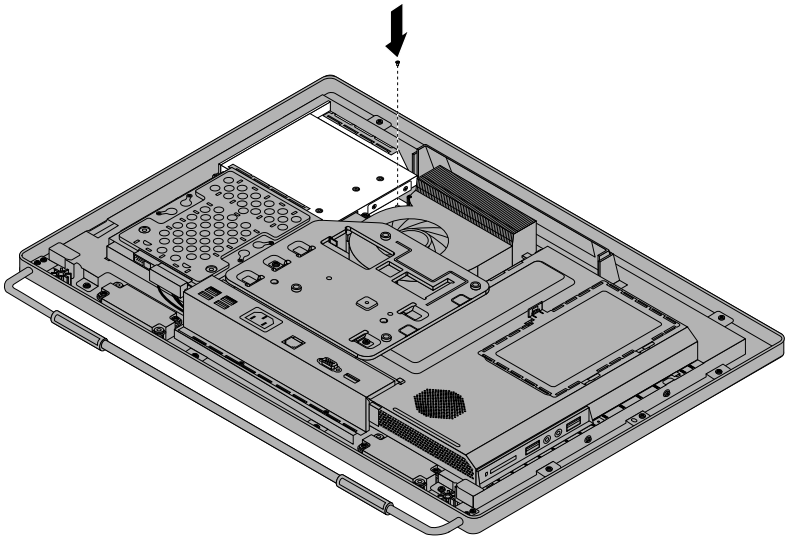


Figure 18. Installing the screw to secure the optical drive

8. Go to “Completing the parts replacement” on page 124.

Removing the VESA mount bracket

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to remove the VESA mount bracket.

To remove the VESA mount bracket, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Locate the VESA mount bracket. See “FRU locations” on page 86.
5. Remove the four screws **1** that secure the VESA mount bracket and lift the VESA mount bracket out of the computer.

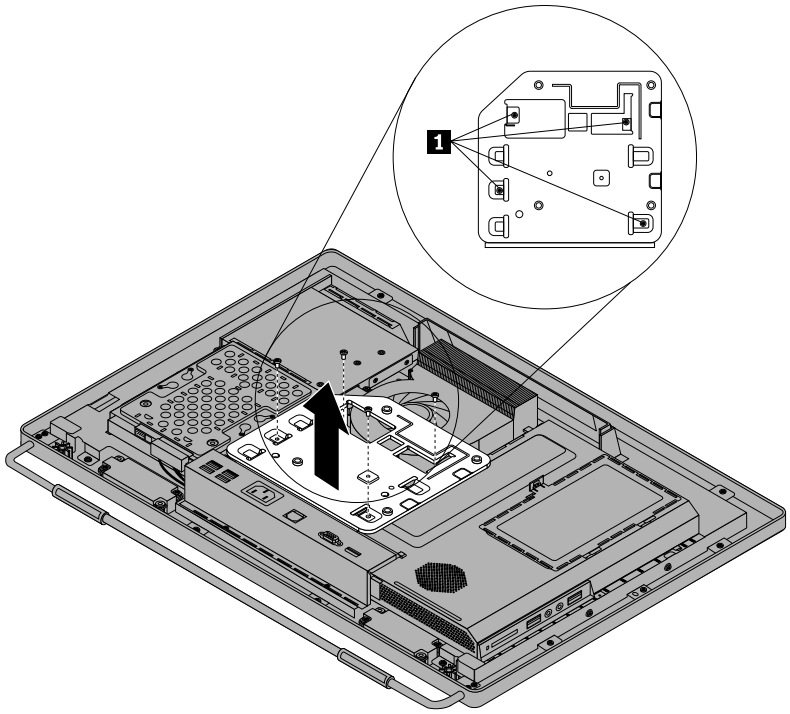


Figure 19. Removing the VESA mount bracket

6. To reinstall the VESA mount bracket, position the VESA mount bracket into the computer so that the screw holes align with those in the computer. Reinstall the four screws to secure the VESA mount bracket.
7. Go to “Completing the parts replacement” on page 124.

Replacing the rear I/O assembly

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the rear I/O assembly.

To replace the rear I/O assembly, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Locate the rear I/O assembly. See “FRU locations” on page 86.
5. Remove the two screws **1** that secure the rear I/O assembly.

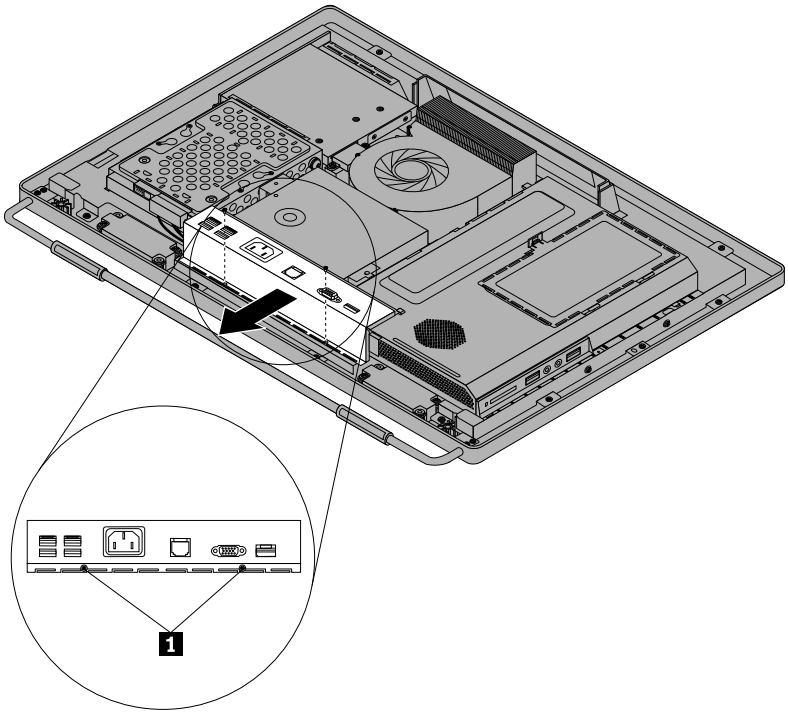


Figure 20. Removing the two screws that secure the rear I/O assembly

6. Turn the rear I/O assembly up side down, and then remove the two screws that secure the power cord connector to the power cord connector bracket. Remove the rear I/O assembly from the computer.

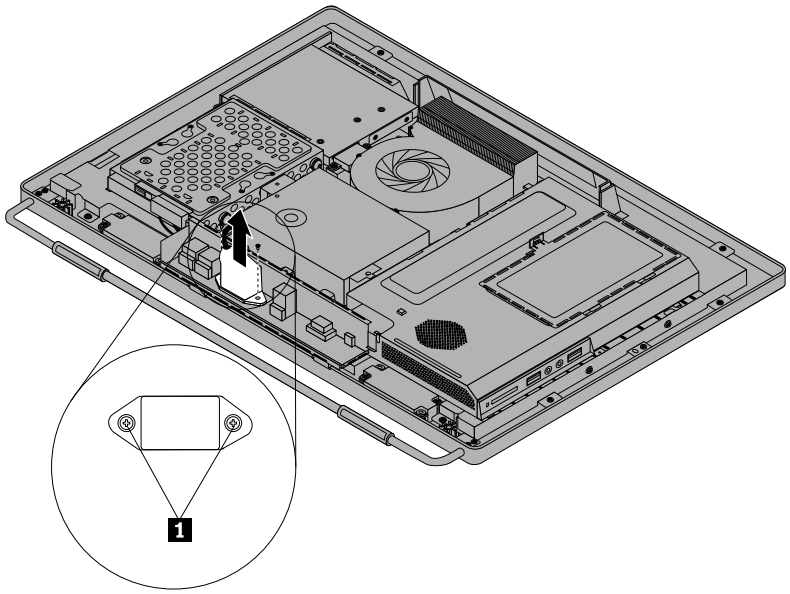


Figure 21. Removing the power cord connector

7. To reinstall the rear I/O assembly, reinstall the two screws that secure the power cord connector to the power cord connector bracket. Position the new rear I/O assembly into place, and then align the screw holes with the corresponding holes in the computer main bracket. Install the two screws to secure the rear I/O assembly.
8. Go to “Completing the parts replacement” on page 124.

Removing and reinstalling the system board shield

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to remove and reinstall the system board shield.

To remove and reinstall the system board shield, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Locate the system board shield in the computer. See “FRU locations” on page 86.

5. Remove the screw that secures the system board shield, and then slide the system board shield out of the computer.

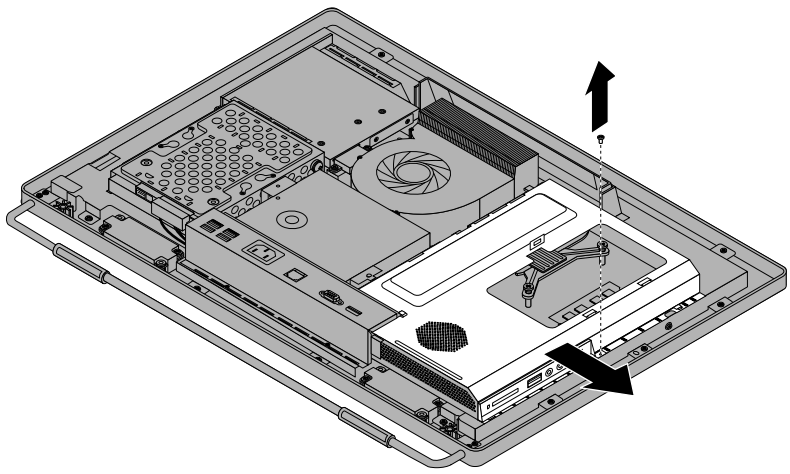


Figure 22. Removing the system board shield

6. To reinstall the system board shield, slide the system board shield into the system board shield slot so that the screw hole aligns with that in the computer.
7. Reinstall the screw to secure the system board shield to the computer.
8. Go to “Completing the parts replacement” on page 124.

Replacing the power supply

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the power supply.

To replace the power supply, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Remove the VESA mount bracket. See “Removing the VESA mount bracket” on page 98.
5. Locate the power supply. See “FRU locations” on page 86.
6. Remove the system board shield. See “Removing and reinstalling the system board shield” on page 101.
7. Disconnect the power supply cables from the system board. See “System board parts and connectors” on page 88.
8. Remove the rear I/O assembly, and then remove the power cord connector from the power cord connector bracket. See “Replacing the rear I/O assembly” on page 99.

9. Remove the three screws 1 that secure the power supply, and then remove the power supply out of the computer.

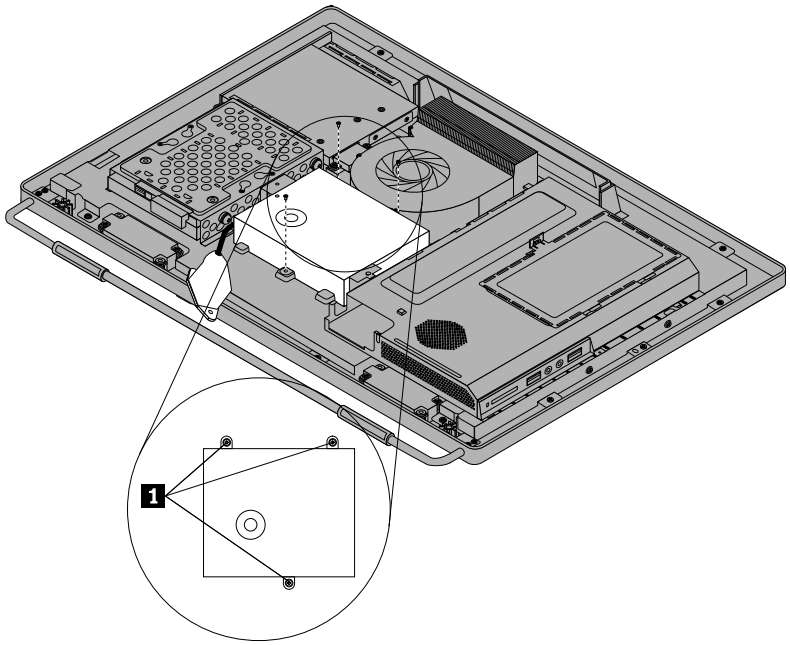


Figure 23. Removing the three screws that secure the power supply

10. To reinstall the power supply, reinstall the two screws that secure the power cord connector to the power connector bracket. See “Replacing the rear I/O assembly” on page 99.
11. Position the new power supply in the computer and align the three screw holes in the new power supply with those in the computer main bracket. Install the three screws to secure the new power supply.
12. Route the new power cord connector cable, and then reinstall the rear I/O assembly. See “Replacing the rear I/O assembly” on page 99.
13. Connect the new power supply cables to the power supply connectors on the system board. See “System board parts and connectors” on page 88.
14. Reinstall the system board shield. See “Removing and reinstalling the system board shield” on page 101.
15. Reinstall the VESA mount bracket. See “Removing the VESA mount bracket” on page 98.
16. Reinstall the computer cover. See “Removing the computer cover” on page 94.
17. Go to “Completing the parts replacement” on page 124.

Replacing the microprocessor fan

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the microprocessor fan.

To replace the microprocessor fan, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Locate the microprocessor fan in the computer. See “FRU locations” on page 86.
5. Remove the system board shield. See “Removing and reinstalling the system board shield” on page 101.
6. Note the routing of the microprocessor fan cable, and then disconnect the microprocessor fan cable from the system board. See “System board parts and connectors” on page 88.
7. Remove the two screws **1** that secure the microprocessor fan to the main bracket. Then, lift the microprocessor fan off the main bracket.

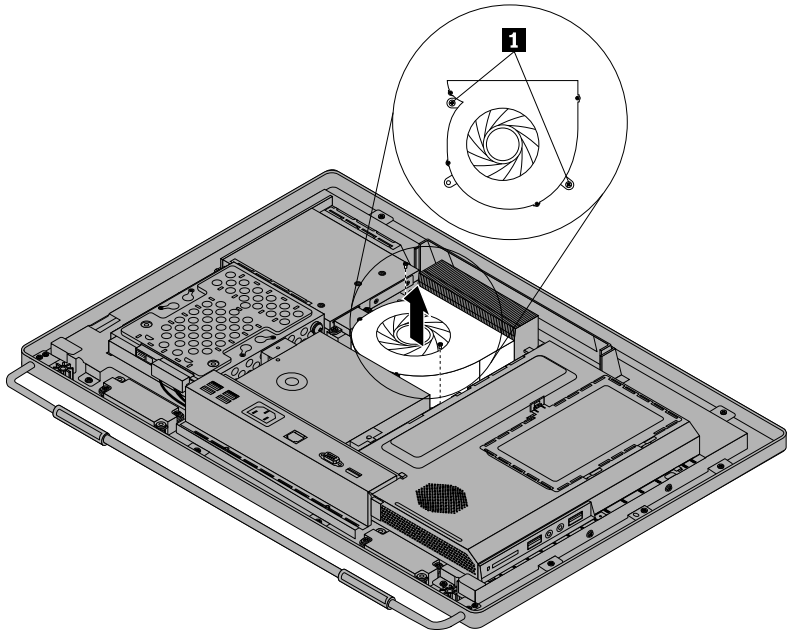


Figure 24. Removing the microprocessor fan

8. To reinstall the microprocessor fan, position the new microprocessor fan on the main bracket and align the screw holes in the new microprocessor fan with those in the main bracket. Reinstall the two screws that secure the microprocessor fan to the main bracket.
9. Connect the new microprocessor fan cable to the system board. See “System board parts and connectors” on page 88.
10. Reinstall the system board shield. See “Removing and reinstalling the system board shield” on page 101.
11. Reinstall the computer cover. See “Removing the computer cover” on page 94.
12. Go to “Completing the parts replacement” on page 124.

Replacing the heat sink assembly

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy

of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the heat sink assembly.

CAUTION:

The heat sink and fan assembly might be very hot. Turn off the computer and wait three to five minutes to let the computer cool before removing the computer cover.

To replace the heat sink assembly, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Locate the heat sink assembly on the system board. See “FRU locations” on page 86.
5. Remove the system board shield. See “Removing and reinstalling the system board shield” on page 101.
6. Follow the sequence 1, 2, 3, 4 on the heat sink assembly to loose the four screws that secure the heat sink assembly to the system board.

   Note: Carefully loose the four screws from the system board to avoid any possible damage to the system board. The four screws cannot be removed from the heat sink assembly.

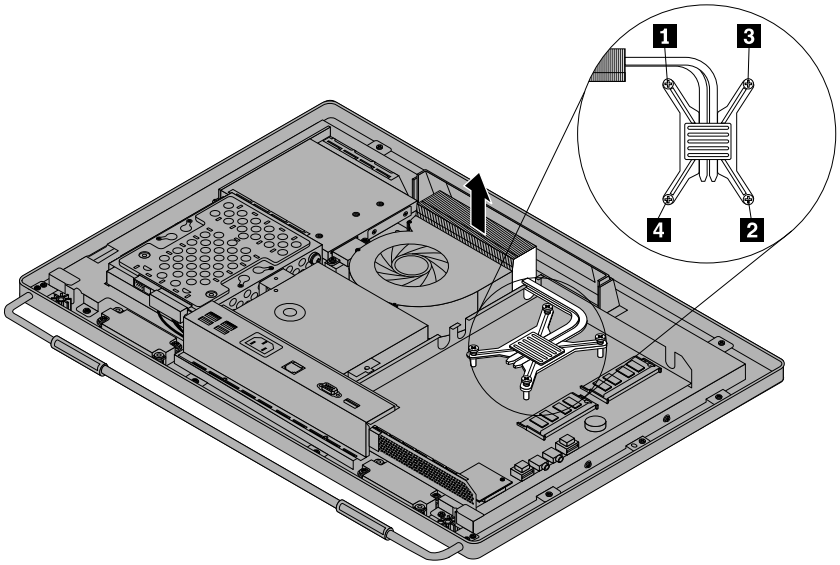


Figure 25. Loosing the four screws that secure the heat sink assembly to the system board

7. Lift the failing heat sink assembly off the system board.

   Notes:

   a. You might have to gently twist the heat sink assembly to free it from the microprocessor.

   b. Do not touch the thermal grease while handling the heat sink assembly.
8. To reinstall the heat sink assembly, position the new heat sink assembly on the system board so that the four screws are aligned with the corresponding holes in the system board.

9. Follow the sequence 1, 2, 3, 4 on the heat sink assembly to tighten the four screws to secure the heat sink assembly to the system board, as shown in Figure 25 “Loosing the four screws that secure the heat sink assembly to the system board” on page 105.
10. Reinstall the system board shield. See “Removing and reinstalling the system board shield” on page 101.
11. Go to “Completing the parts replacement” on page 124.

Replacing the microprocessor

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the microprocessor.

CAUTION:

The heat sink and fan assembly might be very hot. Turn off the computer and wait three to five minutes to let the computer cool before removing the computer cover.

To replace the microprocessor, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Locate the microprocessor on the system board. See “FRU locations” on page 86.
5. Remove the system board shield. See “Removing and reinstalling the system board shield” on page 101.
6. Remove the heat sink assembly to gain access to the microprocessor. See “Replacing the heat sink assembly” on page 104.
7. Press the small handle 1 to open the retainer 2 to access the microprocessor 3.

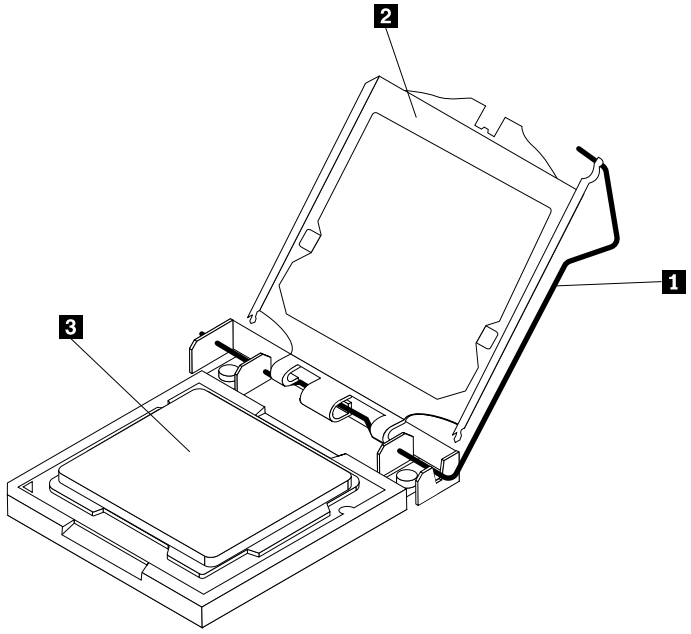


Figure 26. Opening the retainer to access the microprocessor

8. Lift the microprocessor straight up and out of the socket.

Notes:

a. Your microprocessor and socket might look different from the one illustrated.

b. Note the orientation of the microprocessor in the socket. You can either look for the small triangle 1 on one corner of the microprocessor or note the orientation of the notches 2 on the microprocessor. This is important when installing a new microprocessor on the system board.

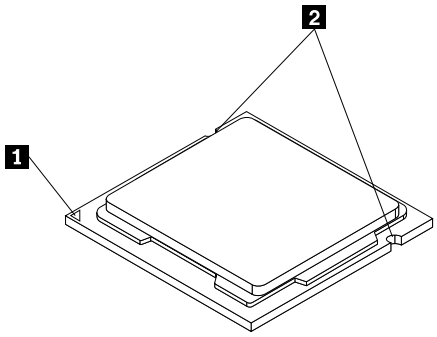


Figure 27. Noting the orientation of the microprocessor in the socket

c. Touch only the sides of the microprocessor. Do not touch the gold contacts on the bottom.

d. Do not drop anything onto the microprocessor socket while it is exposed. The socket pins must be kept as clean as possible.

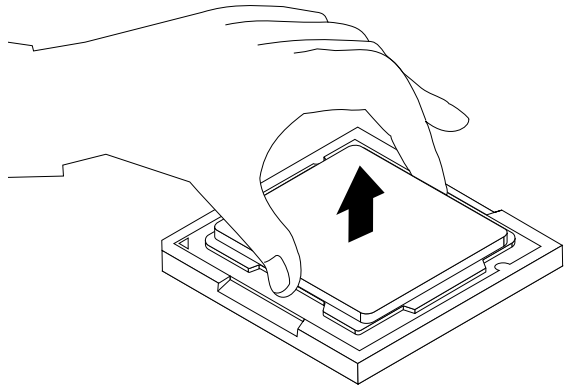


Figure 28. Removing the microprocessor

9. Make sure that the small handle is in the raised position and the microprocessor retainer is fully open.
10. Hold the new microprocessor and align the notches **2** on it with the alignment keys in the microprocessor socket, or align the small triangle **1** on one corner of the new microprocessor with the corresponding beveled corner of the microprocessor socket.

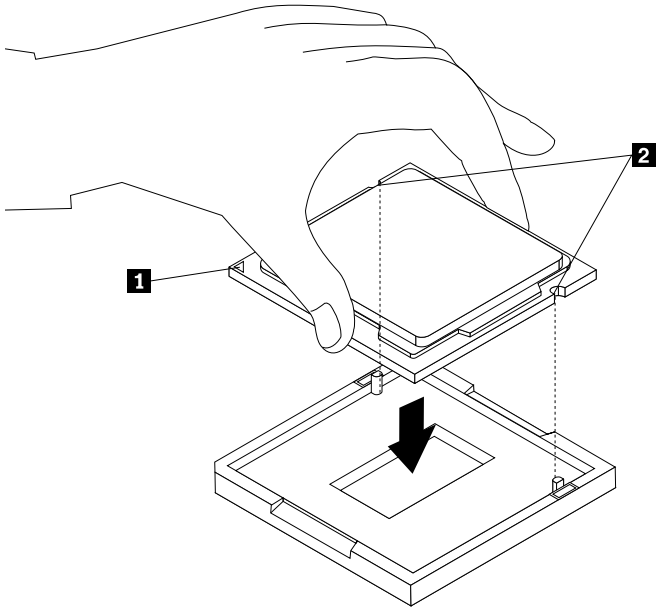


Figure 29. Installing the microprocessor

11. Lower the new microprocessor straight down into the microprocessor socket on the system board.
12. Close the microprocessor retainer and lock it into position with the small handle to secure the new microprocessor in the socket.
13. Reinstall the heat sink assembly. See “Replacing the heat sink assembly” on page 104.
14. Reinstall the system board shield. See “Removing and reinstalling the system board shield” on page 101.
15. Go to “Completing the parts replacement” on page 124.

Replacing the card reader

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the card reader.

Note: The card reader is available only in some models.

To replace the card reader, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Locate the card reader in the computer. See “FRU locations” on page 86.
5. Remove the system board shield. See “Removing and reinstalling the system board shield” on page 101.
6. Disconnect the card reader cable from the card reader.
7. Remove the two screws **1** that secure the card reader, and then lift the card reader out of the computer.

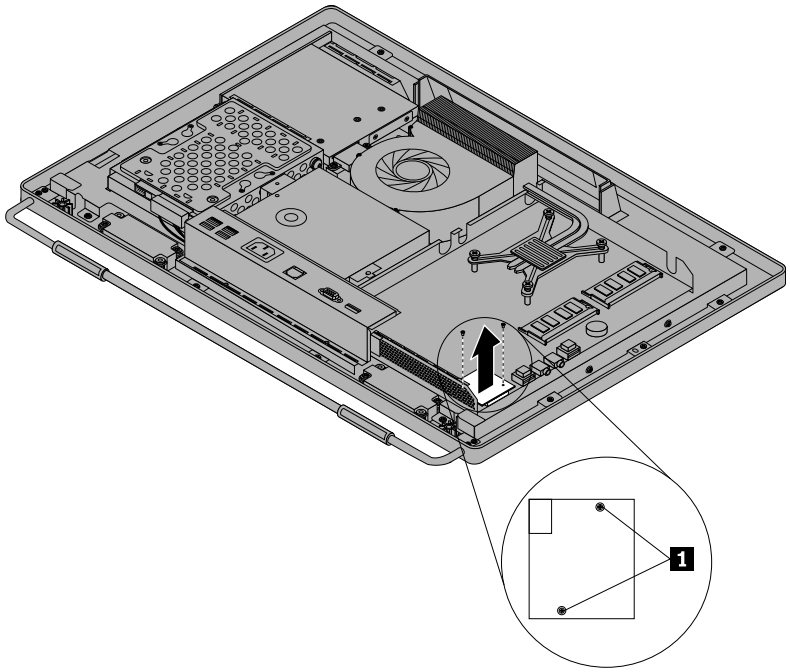


Figure 30. Removing the card reader

8. To reinstall the card reader, align the screw holes in the new card reader with those in the computer, and then install the two screws to secure the card reader.
9. Connect the card reader cable to the new card reader.

10. Reinstall the system board shield. See “Removing and reinstalling the system board shield” on page 101.
11. Go to “Completing the parts replacement” on page 124.

Opening the system board shield window

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to open and close the system board shield window.

To open and close the system board shield window, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Locate the system board shield window. See “FRU locations” on page 86.
5. Press the upper metal tab of the system board shield window, and then pivot the system board shield window to open it.

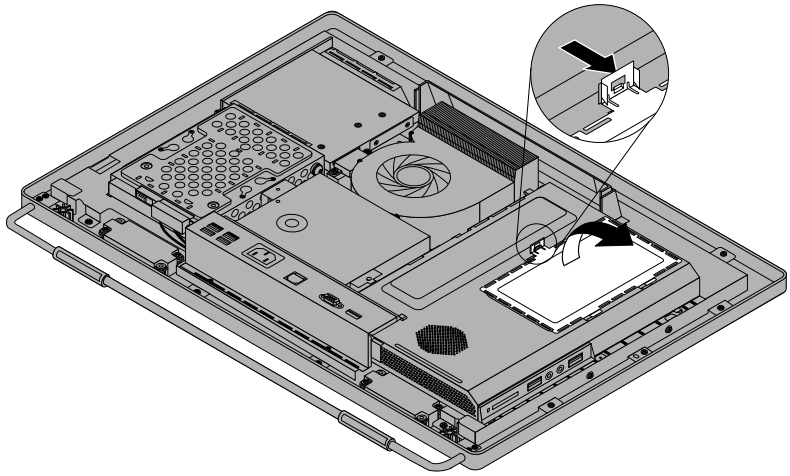


Figure 31. Opening the system board shield window

6. To close the system board shield window, place the system board shield window on the system board shield. Pivot the system board shield window until the two metal tabs align with each other, and then press the upper metal tab to snap it into the position.
7. Go to “Removing the computer cover” on page 94.

Replacing the battery

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the battery.

Your computer has a special type of memory that maintains the date, time, and settings for built-in features, such as parallel-port assignments (configuration). A battery keeps the information active when you turn off the computer.

The battery normally requires no charging or maintenance throughout its life. However, if the battery fails, the date, time, and configuration information (including passwords) are lost. An error message will be displayed when you turn on the computer.

Refer to “Lithium battery notice” in the *ThinkCentre Safety and Warranty Guide* for information about replacing and disposing of the battery.

To replace the battery, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Locate the battery on the system board. See “FRU locations” on page 86.
5. Remove the system board shield or open the system board shield window to get access to the battery. See “Removing and reinstalling the system board shield” on page 101 or “Opening the system board shield window” on page 110.
6. Remove the battery.

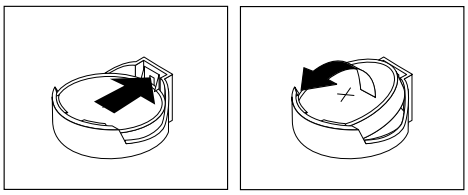


Figure 32. Removing the battery

7. Install a new battery.

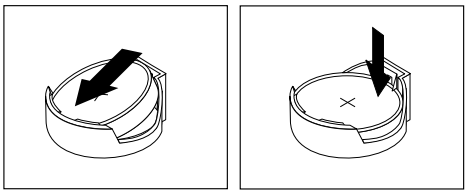


Figure 33. Installing a new battery

8. Reinstall the system board shield or close the system board shield window. See “Removing and reinstalling the system board shield” on page 101 or “Opening the system board shield window” on page 110.
9. Reinstall the computer cover. See “Completing the parts replacement” on page 124.
10. Turn on the computer and all attached devices.

    Note: When you turn the computer for the first time after replacing the battery, an error message might be displayed. This is normal after replacing the battery.
11. Use the Setup Utility program to set the date, time, and any passwords. See Chapter 6 “Using the Setup Utility program” on page 57.

Replacing the inverter

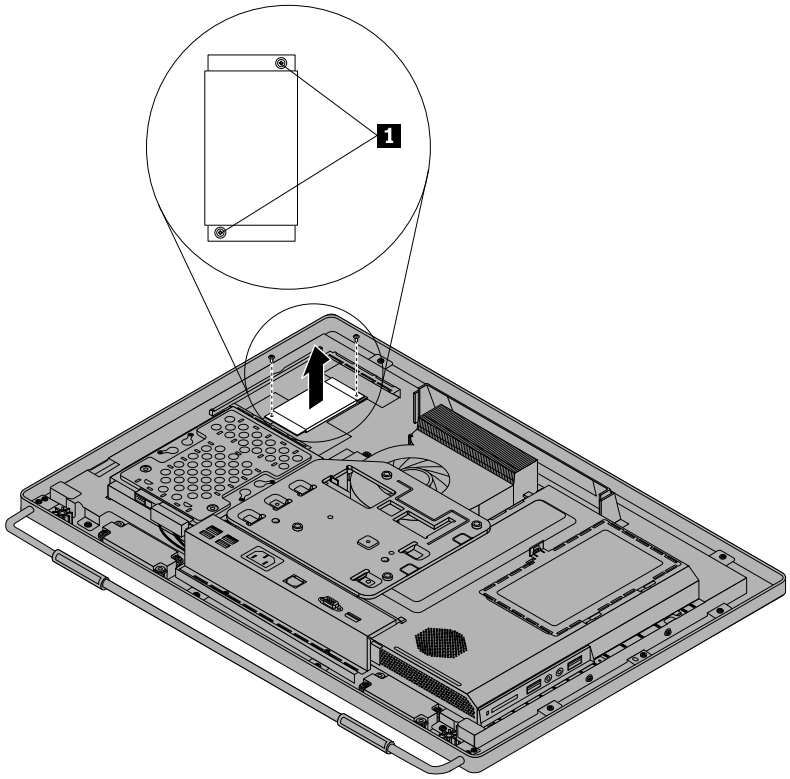
Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the inverter.

To replace the inverter, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Remove the optical drive. See “Replacing the optical drive” on page 97.
5. Locate the inverter in the computer. See “FRU locations” on page 86.
6. Remove the two screws that secure the inverter to the main bracket.



7. Disconnect the three cables from the inverter.
8. Lift the inverter off the computer.
9. To reinstall the new inverter, connect the three cables to the new inverter. Position the new inverter and align the two screw holes in the new inverter with those in the computer.
10. Install the two screws to secure the new inverter to the main bracket.
11. Reinstall the optical drive. See “Replacing the optical drive” on page 97.
12. Go to “Completing the parts replacement” on page 124.

Installing or replacing a memory module

Attention:
Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to install or replace a memory module.

Your computer has two memory slots for installing or replacing DDR3 SODIMMs (small outline dual inline memory modules). When installing or replacing a memory module, use 1 GB, 2 GB or 4 GB DDR3 SODIMMs in any combination up to a maximum of 8 GB of system memory.

To install or replace a memory module, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.

4. Locate the memory slots on the system board. See “FRU locations” on page 86.
5. Remove the system board shield or open the system board shield window to get access to the battery. See “Removing and reinstalling the system board shield” on page 101 or “Opening the system board shield window” on page 110.
6. Remove any parts and disconnect any cables that might prevent your access to the memory slots.
7. Do one of the following:
   - If you are replacing a memory module, open the retaining clips and remove the old memory module that is currently installed.

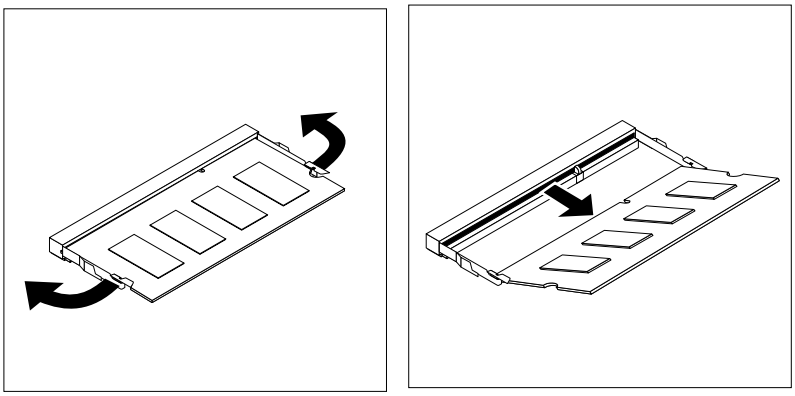


Figure 34. Removing a memory module

   - If you are installing a memory module, open the retaining clips of the memory slot into which you want to install the memory module.
8. Insert the notched end **1** of the new memory module into the slot. Press the memory module firmly and pivot the memory module until it snaps into place. Make sure that the memory module is secured in the slot and does not move easily.

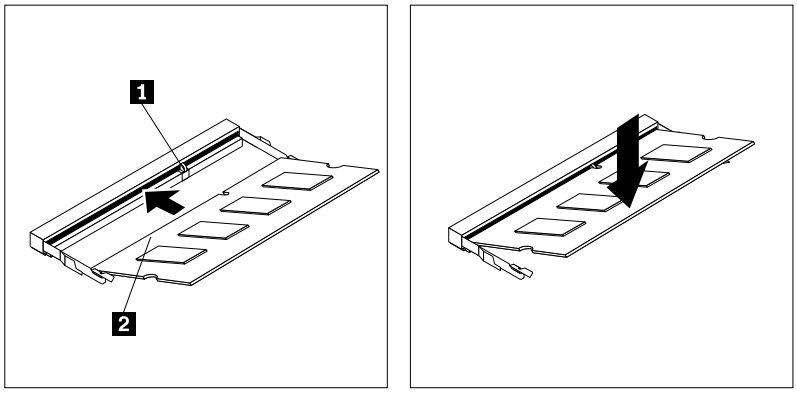


Figure 35. Installing a memory module

9. Reinstall the system board shield or close the system board shield window. See “Removing and reinstalling the system board shield” on page 101 or “Opening the system board shield window” on page 110.
10. Go to “Completing the parts replacement” on page 124.

Replacing the internal speakers

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the internal speakers.

To replace the internal speakers, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Locate the internal speakers in the computer. See “FRU locations” on page 86.
5. Remove the system board shield. See “Removing and reinstalling the system board shield” on page 101.
6. Note the location of the internal speaker cable connection and the routing of the internal speaker cables. Disconnect the internal speaker cables from the system board.
7. Remove the two screws that secure each internal speaker to the front bezel, and then remove the internal speakers from the computer.

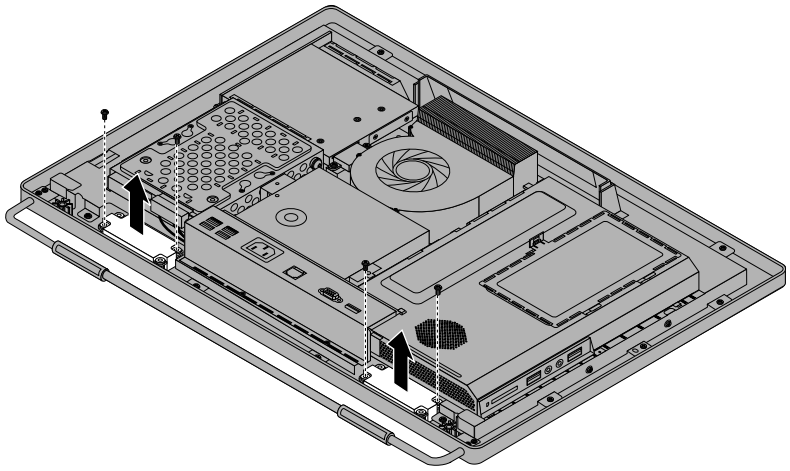


Figure 36. Removing the internal speakers

8. Route the new internal speaker cables, and then position the new internal speakers on the front bezel so that the two screw holes in each internal speaker align with those in the front bezel.
9. Reinstall the two screws to secure each of the internal speakers to the front bezel.
10. Connect the internal speaker cables to the system board. See “System board parts and connectors” on page 88.
11. Reinstall the system board shield. See “Removing and reinstalling the system board shield” on page 101.
12. Go to “Completing the parts replacement” on page 124.

Replacing the integrated camera

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the integrated camera.

Note: The integrated camera is available only in some models.

To replace the integrated camera, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Locate the integrated camera in the computer. See “FRU locations” on page 86.
5. Remove the system board shield. See “Removing and reinstalling the system board shield” on page 101.
6. Note the routing of the integrated camera cable, and then disconnect the cable from the system board. See “System board parts and connectors” on page 88.
7. Remove the two screws that secure the integrated camera to the front bezel to remove the integrated camera from the computer.

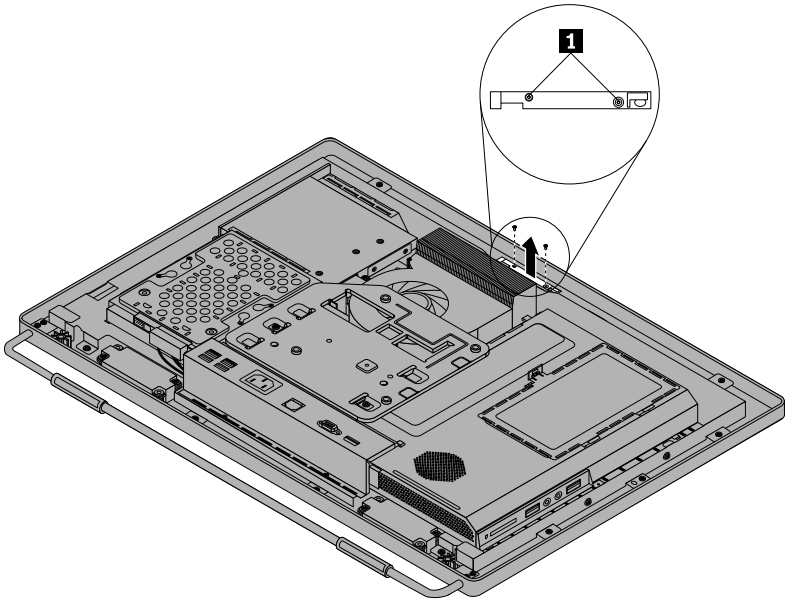


Figure 37. Removing the integrated camera

8. To reinstall the integrated camera, position the new integrated camera and align the two screw holes in the new integrated camera with those in the front bezel.
9. Install the two screws to secure the new integrated camera to the front bezel.

10. Route the new integrated camera cable, and then connect the integrated camera cable to the system board. See “System board parts and connectors” on page 88.
11. Reinstall the system board shield. See “Removing and reinstalling the system board shield” on page 101.
12. Go to “Completing the parts replacement” on page 124.

Replacing the system board

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the system board.

To replace the system board, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Remove the system board shield. See “Removing and reinstalling the system board shield” on page 101.
5. Locate the system board in the computer. See “FRU locations” on page 86.
6. Remove the heat sink assembly. See “Replacing the heat sink assembly” on page 104.
7. Remove the microprocessor. See “Replacing the microprocessor” on page 106.
8. Remove the memory modules. See “Installing or replacing a memory module” on page 113.
9. Remove the battery. See “Replacing the battery” on page 111.
10. Remove the rear I/O assembly to gain access to the system board. See “Replacing the rear I/O assembly” on page 99.
11. Note the locations of all cable connections on the system board and disconnect all cables. See “System board parts and connectors” on page 88.
12. Remove the seven screws that secure the system board to the main bracket. Carefully lift the system board out of the chassis.

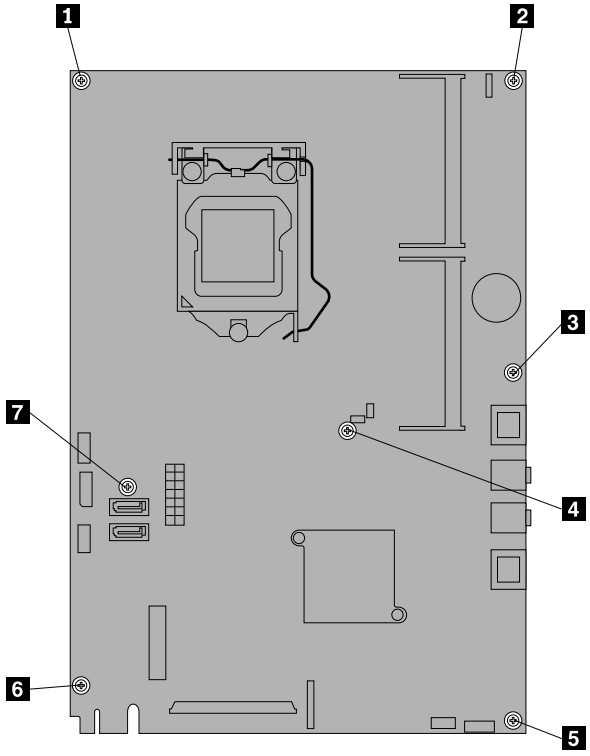


Figure 38. Removing the seven screws that secure the system board to the main bracket

13. Place the new system board into the chassis and align the screw holes with those in the chassis.
14. Reinstall the seven screws that secure the system board to the main bracket.
15. Reinstall the rear I/O assembly. See “Replacing the rear I/O assembly” on page 99.
16. Reinstall the battery. See “Replacing the battery” on page 111.
17. Reinstall the memory modules. See “Installing or replacing a memory module” on page 113.
18. Reinstall the microprocessor. See “Replacing the microprocessor” on page 106.
19. Reinstall the heat sink assembly. See “Replacing the heat sink assembly” on page 104.
20. Reinstall the system board shield. See “Removing and reinstalling the system board shield” on page 101.
21. Reconnect all cables that were disconnected from the system board. See “System board parts and connectors” on page 88.
22. Go to “Completing the parts replacement” on page 124.

The failing system board must be returned with a microprocessor socket cover to protect the pins during shipping and handling.

To install the microprocessor socket cover, do the following:

1. Release the lever securing the microprocessor retainer and open the retainer to access the microprocessor.
2. Grasp the microprocessor on the sides and lift it straight up and out of the socket. Do not touch the contacts on the microprocessor socket.
3. Note the orientation of the socket cover. Align the notches **1** on the microprocessor socket cover with the alignment keys **2** on the microprocessor socket. Install one side of the socket cover into the microprocessor socket.

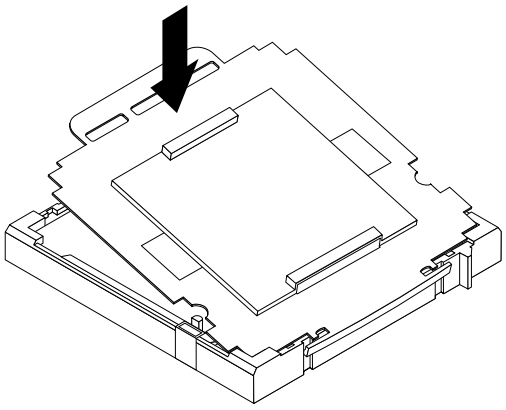


Figure 39. Installing one side of the socket cover into the microprocessor socket

Note: Your microprocessor socket and cover might look slightly different from the illustration.

4. Carefully press the other side of the socket cover downwards until the socket cover snaps into place.
5. Carefully check the four corners of the socket cover to make sure that the cover is secured in the microprocessor socket.
6. Lower the microprocessor retainer, and then lower the lever to secure the retainer. Make sure the lever is locked into position.
7. Follow any additional instructions included with the replacement part you received.

Note: If your system board has two microprocessor sockets, be sure to install a socket cover for each microprocessor socket.

Replacing the LCD panel

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the LCD panel.

To replace the LCD panel, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Remove the foot stands. See “Removing and reinstalling the frame stand” on page 92.

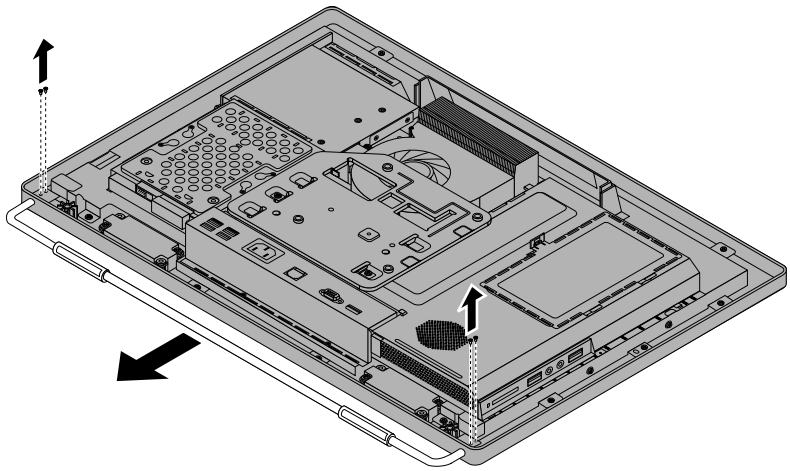
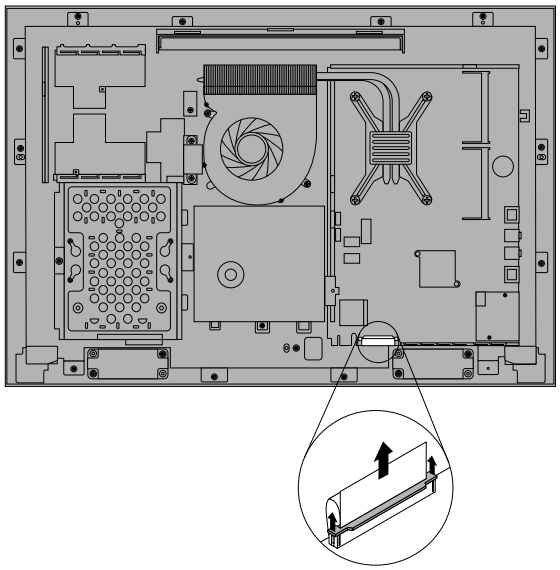


Figure 40. Removing the frame stand

5. Locate the LCD panel in the computer. See “FRU locations” on page 86.
6. Remove the optical drive. See “Replacing the optical drive” on page 97.
7. Remove the inverter. See “Replacing the inverter” on page 112.
8. Remove the rear I/O assembly. See “Replacing the rear I/O assembly” on page 99.
9. Remove the system board shield. See “Removing and reinstalling the system board shield” on page 101.
10. Disconnect the LCD panel cable from the system board. See “System board parts and connectors” on page 88.

Figure 41. Disconnect the LCD panel cable from the system board



11. Remove all the 15 screws that secure the computer main bracket to the front bezel.

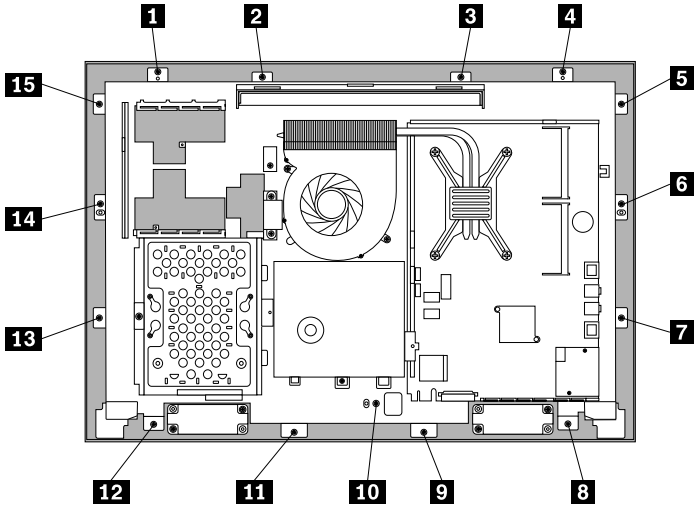


Figure 42. Removing all the 15 screws that secure the computer main bracket to the front bezel

12. Note the locations of all cable connections that prevent you from lifting the computer main bracket, and disconnect all cables. See “System board parts and connectors” on page 88.
13. Remove the integrated camera. See “Replacing the integrated camera” on page 116.
14. Lift the computer main bracket off the front bezel.
15. Remove the four screws that secure the chassis to the LCD panel, and then lift the chassis out of the computer to get assess to the LCD panel.

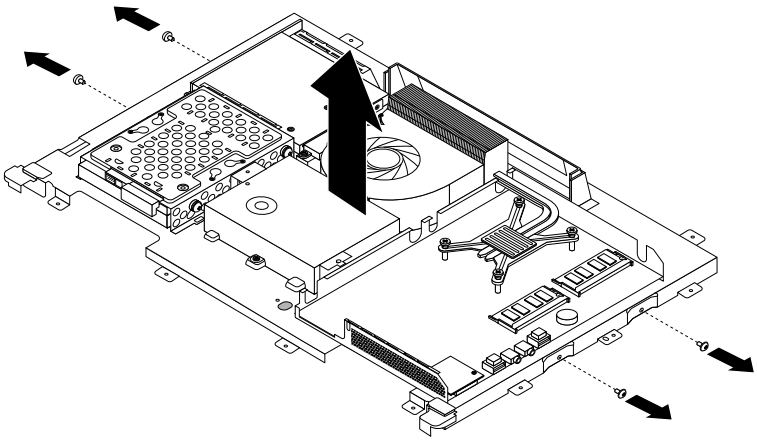


Figure 43. Removing the four screws that secure the LCD panel

16. Place the computer chassis over the new LCD panel so that the four screw holes align with those in the chassis. Reinstall the four screws to secure the LCD panel to the chassis.
17. Position the computer main bracket over the LCD panel. Make sure the screw holes in the computer main bracket align with those in the front bezel.
18. Reinstall all the 15 screws that secure the computer main bracket to the front bezel.

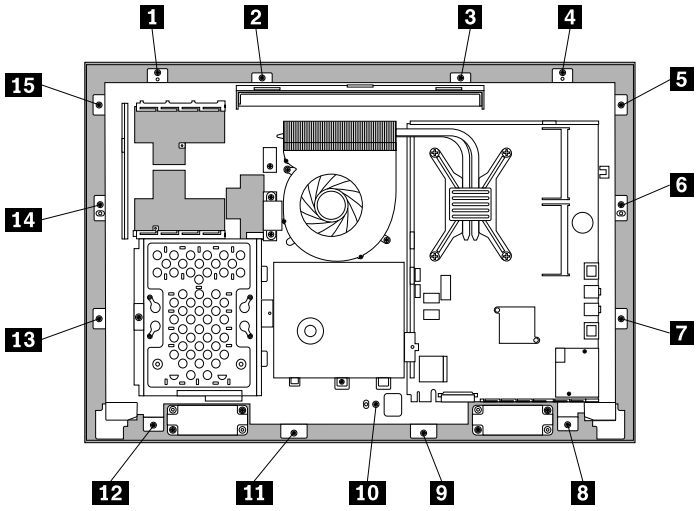


Figure 44. Reinstalling all the 15 screws that secure the computer main bracket to the front bezel

19. Reconnect the LCD panel cable from the system board. See “System board parts and connectors” on page 88.

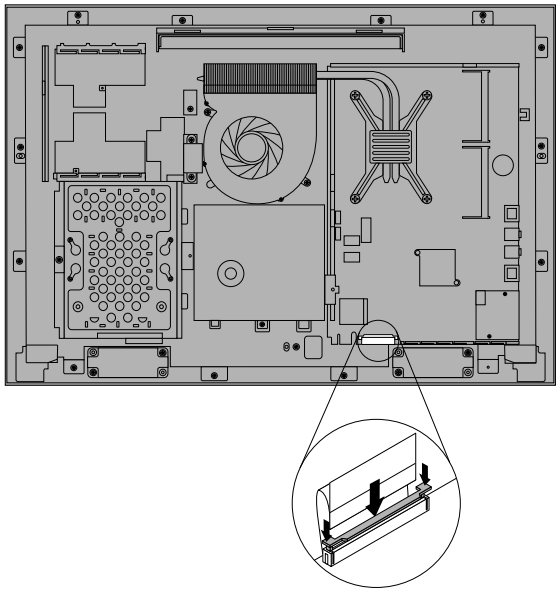


Figure 45. Reconnect the LCD panel cable to the system board

20. Reinstall the integrated camera. See “Replacing the integrated camera” on page 116.
21. Reinstall the rear I/O assembly. See “Replacing the rear I/O assembly” on page 99.
22. Reinstall the system board shield. See “Removing and reinstalling the system board shield” on page 101.
23. Reinstall the foot stands. See “Removing and reinstalling the frame stand” on page 92.
24. Connect all the cables that were disconnected. See “System board parts and connectors” on page 88.
25. Go to “Completing the parts replacement” on page 124.

Replacing the WI-FI card

Attention

Do not open your computer or attempt any repair before reading and understanding the “Important safety information” in the *ThinkCentre Safety and Warranty Guide* that came with your computer. To obtain a copy of the *ThinkCentre Safety and Warranty Guide*, go to:
http://www.lenovo.com/support

This section provides instructions on how to replace the WI-FI card.

Note: The WI-FI card is available only in some models.

To replace the WI-FI card, do the following:

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Place a soft, clean towel or cloth on the desk or other flat surface. Hold the sides of your computer and gently lay it down so that the screen is against the surface and the cover is facing up.
3. Remove the computer cover. See “Removing the computer cover” on page 94.
4. Remove the system board shield. See “Removing and reinstalling the system board shield” on page 101.
5. Locate the WI-FI card on the system board. See “FRU locations” on page 86.
6. Remove the rear I/O assembly. See “Replacing the rear I/O assembly” on page 99.
7. Disconnect the two cables from the WI-FI card, and then carefully remove the screw that secures the WI-FI card to the system board.

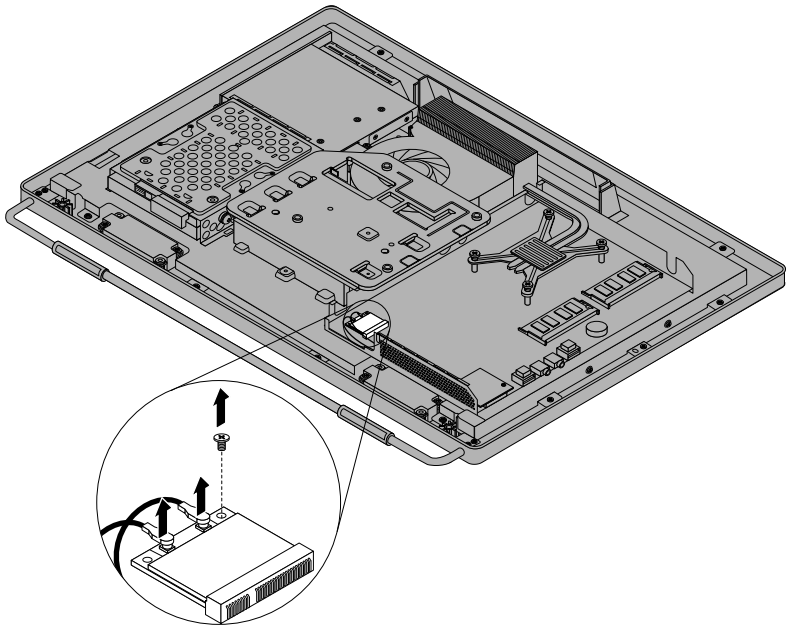


Figure 46. Removing the screw that secures the WI-FI card to the system board

8. Pivot the WI-FI card upward and lift the WI-FI card out of the mini PCI Express slot.

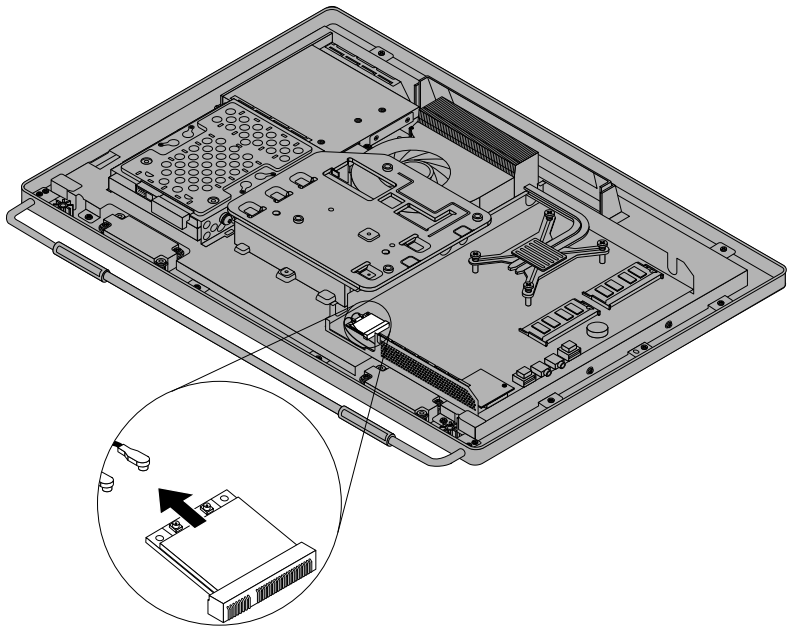


Figure 47. Removing the WI-FI card

9. Insert the notched end of the new WI-FI card into the mini PCI Express slot. Press the new WI-FI card firmly, and then pivot the WI-FI card to align the screw hole in the new WI-FI card with that in the system board.
10. Install the screw to secure the new WI-FI card to the system board.
11. Connect the two cables to the new WI-FI card.
12. Reinstall the rear I/O assembly. See “Replacing the rear I/O assembly” on page 99.
13. Reinstall the system board shield. See “Removing and reinstalling the system board shield” on page 101.
14. Go to “Completing the parts replacement” on page 124.

Completing the parts replacement

After completing the installation or replacement for all parts, you need to reinstall the computer cover and reconnect cables.

To reinstall the computer cover and reconnect cables, do the following:

1. Make sure that all components have been reassembled correctly and that no tools or loose screws are left inside your computer. See “FRU locations” on page 86 for the locations of various components in your computer.
2. Make sure that the cables are routed correctly before reinstalling the computer cover. Keep cables clear of the hinges and sides of the computer chassis to avoid interference with reinstalling the computer cover.

3. Lower and position the computer cover into place and then tighten the two screws 1 to secure the computer cover.

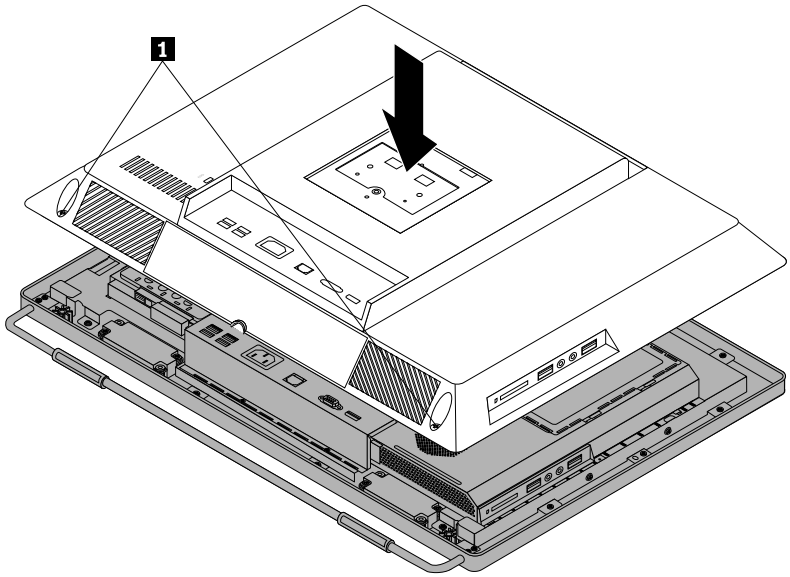


Figure 48. Installing the computer cover

4. Reinstall the system stand and system stand hinge cover. See “Removing and reinstalling the system stand” on page 90 and “Removing and reinstalling the system stand hinge cover” on page 88.
5. Lock the computer cover if you have an integrated cable lock.
6. Reconnect the external cables and power cord to the computer.
7. Depending on the parts you installed or replaced, you might need to confirm the updated information in the Setup Utility program. Refer to Chapter 6 “Using the Setup Utility program” on page 57.

Note: In most areas of the world, Lenovo requires the return of the defective Customer Replaceable Unit (CRU). Information about this will come with the CRU or will come a few days after the CRU arrives.

Chapter 9. FRU lists

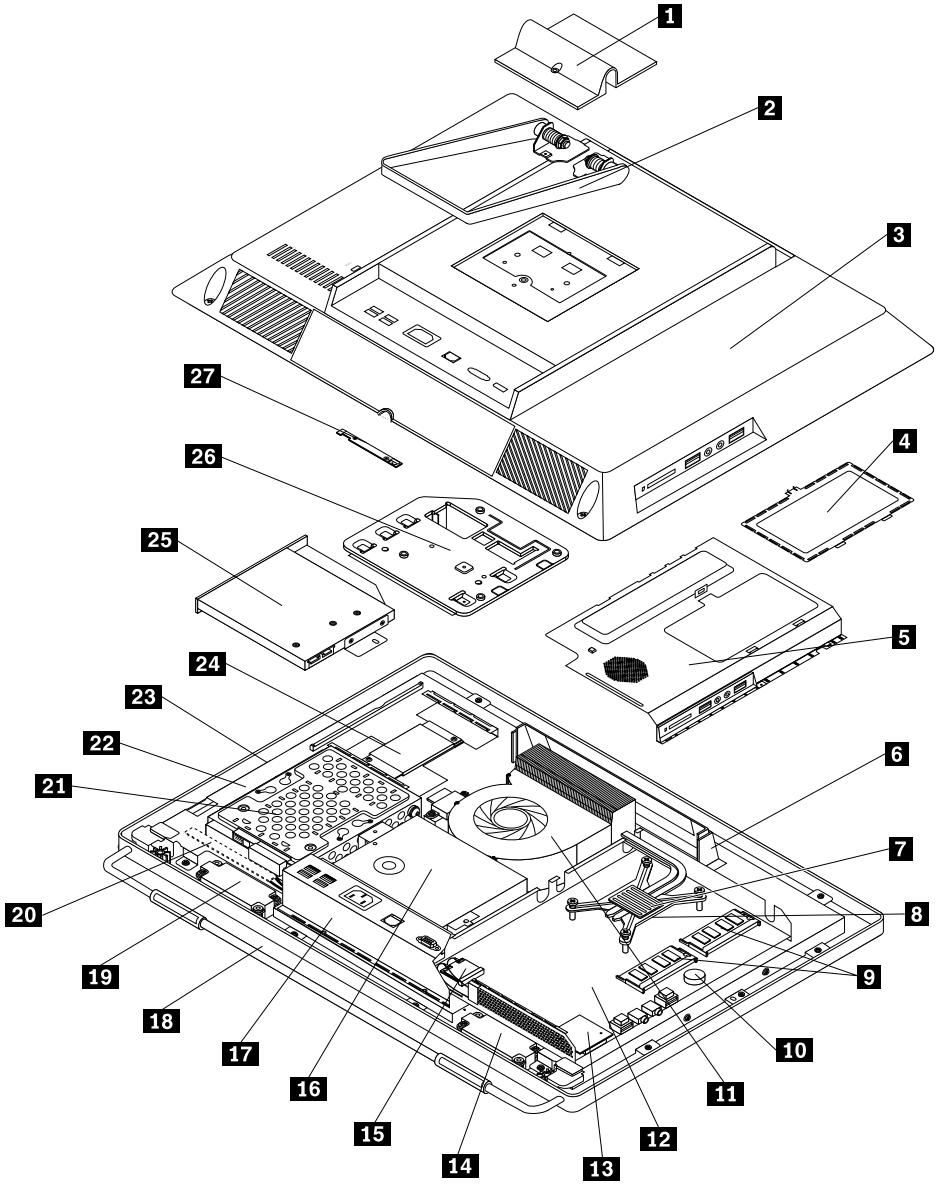
This chapter lists the information on the field replaceable units (FRUs).

Attention: Be sure to read and understand all the safety information before replacing any FRUs.

Note: In the following tables, a customer replaceable unit (CRU) is identified as “1,” “2,” or “N” in the CRU column. “N” means that the part is not a CRU, “1” means that the part is a Self-service CRU, and “2” means that the part is an Optional-service CRU.

Overall: MT 1654, 1664, 1677, 1738, 1739, and 1938

The FRU list below is for MTs: 1654, 1664, 1677, 1738, 1739, and 1938



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Item #	FRUs	FRU #	CRU
2	Assembly monitor stand, touch and non-touch • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9686	N
3	Assembly rear cover, touch & non-touch • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9670	N
8	Microprocessor, Ci3 2100 Sandy Bridge 3MB 2c FCLGA 3.1GHZ 65W • MT 1654: CTO A1G • MT 1664: CTO A1U A1F • MT 1677: CTO A6A A6T A7G A7A A7T A1U A1S A1D A1Y A5S A5D A5Y B1G B3G B7V D3J D4J • MT 1738: CTO A1G A2G • MT 1739: CTO • MT 1938: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	03T8011	N
7	Microprocessor cooler • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9619	N
8	Microprocessor, Ci3 2120 Sandy Bridge 3MB 2c FCLGA 3.3GHz 65W • MT 1654: CTO • MT 1664: CTO A6U A6F A6S • MT 1677: CTO C1B D5G D7G E1J E2J • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T8010	N

Item #	FRUs	FRU #	CRU
8	Microprocessor, Ci5 2400S Sandy Bridge 6MB 4c FCLGA 2.5GHZ 65W • MT 1654: CTO • MT 1664: CTO A2J A3U A3F A3S A8U A8F A8S A9J • MT 1677: CTO A8A A8T A9A A9T A3S A3D A3Y B6U B6F B8H B8V D1J D2J E3J E4J • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T8017	N
8	Microprocessor, Ci5 2500S Sandy Bridge 8MB 4c FCLGA 2.7GHZ 65W • MT 1654: CTO • MT 1664: CTO A4U A4F A4S A7U A7F A7S • MT 1677: CTO A4S A4D A4Y B4G B5G B4B D6G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	03T8016	N
8	Microprocessor, G620 Sandy Bridge 3MB 2c FCLGA 2.6GHZ 65W HD GRAPHICS • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A2S A2D A2Y B2G • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T6226	N
8	Microprocessor, G840 Sandy Bridge 3MB 2c FCLGA 2.8GHZ 65W HD GRAPHICS • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T6225	N
8	Microprocessor, G850 Sandy Bridge 3MB 2c FCLGA 2.9GHz 65W HD GRAPHICS • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T6224	N

Item #	FRUs	FRU #	CRU
8	Microprocessor, Ci7 2600S Sandy Bridge 8MB 4c FCLGA 2.8GHZ 65W vPro • MT 1654: CTO • MT 1664: CTO A5U A5F A5S • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T8015	N
8	Microprocessor, Ci3-2130,3.40GHz/3M/65W, dual core • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T8358	N
8	Microprocessor, Pentium G860, 3.0GHz/3M/65W, 2C • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T8361	N
8	Microprocessor, Pentium G630, 2.70GHz/3M/65W,2C • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T8360	N
8	Microprocessor, G540 Sandy Bridge 2MB 2c FCLGA 2.5GHZ 65W • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T8354	N

Item #	FRUs	FRU #	CRU
8	Microprocessor, G530 Sandy Bridge 2MB 2c FCLGA 2.4GHZ 65W • MT 1654: CTO A2U A2F A2S • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T8356	N
8	Microprocessor, G440 Sandy Bridge 1MB 2c FCLGA 1.6GHZ 35W • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T8355	N
9	Memory modules, 1GB PC3-10600 1333MHz DDR3 SoDIMM • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	64Y6650	N
9	Memory modules, 2GB PC3-10600 1333MHz DDR3 SoDIMM • MT 1654: CTO A2U A2F A2S • MT 1664: CTO A2J A9J • MT 1677: CTO C1B A6A A6T A7G A7A A7T A8A A8T A9A A9T A1U A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y B2G B5G B7V B8H B8V D1J D2J D3J D4J D5G D7G E1J E2J E3J E4J • MT 1738: CTO A2G • MT 1739: CTO A1G • MT 1938: CTO	64Y6651	N
9	Memory modules, 4GB PC3-10600 1333MHz DDR3 SoDIMM • MT 1654: CTO A1G • MT 1664: CTO A1U A1F A3U A3F A3S A4U A4F A4S A5U A5F A5S A6U A6F A6S A7U A7F A7S A8U A8F A8S • MT 1677: CTO B6U B6F B1G B3G B4G B4B D6G • MT 1738: CTO A1G A3G • MT 1739: CTO • MT 1938: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	89Y9225	N

Item #	FRUs	FRU #	CRU
11	110x110x25mm microprocessor fan • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9620	N
11	110x110x25mm microprocessor fan • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9684	N
12	System board, with TPM card • MT 1654: CTO A1G A2U A2F A2S • MT 1664: CTO A1U A1F A2J A3U A3F A3S A4U A4F A4S A5U A5F A5S A6U A6F A6S A7U A7F A7S A8U A8F A8S A9J • MT 1677: CTO C1B A6A A6T A7G A7A A7T A8A A8T A9A A9T A1U A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y B6U B6F B1G B2G B3G B4G B5G B7V B8H B8V D1J D2J D3J D4J B4B D5G D6G D7G E1J E2J E3J E4J • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	03T6422	N
12	System board, without TPM card • MT 1654: • MT 1664: CTO • MT 1677: CTO D5G B1G B2G B3G B4G B5G D6G D7G • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T6441	N
13	7 in 1 card reader • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T9016	N

Item #	FRUs	FRU #	CRU
15	Intel-1000 wireless Condor Peak • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	60Y3241	N
16	Power supply assembly, 150w 85+ AIO PSU • MT 1654: CTO A1G A2U A2F A2S • MT 1664: CTO A1U A1F A2J A3U A3F A3S A4U A4F A4S A5U A5F A5S A6U A6F A6S A7U A7F A7S A8U A8F A8S A9J • MT 1677: CTO C1B A6A A6T A7G A7A A7T A8A A8T A9A A9T A1U A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y B6U B6F B1G B2G B3G B4G B5G B7V B8H B8V D1J D2J D3J D4J B4B D5G D6G D7G E1J E2J E3J E4J • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	03T9022	N
17	Rear I/O kit with DP • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T6424	N
17	Rear I/O with DP + Com • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9031	N
17	Assembly_rear_I/O_bracket_without_Com • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9667	N

Item #	FRUs	FRU #	CRU
17	Assembly_rear_I/O_bracket_with_Com • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9666	N
18	Assembly frame stand, touch and non-touch • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9685	N
21	Hard disk drive, SATA 250GB 7200RPM/3Gb/8M • MT 1654: CTO • MT 1664: CTO A8U A8F A8S • MT 1677: CTO A6A A6T D3J D4J E1J E2J E3J E4J • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	40Y9036	N
21	Hard disk drive, SATA 250GB 7200RPM/3Gb/8M • MT 1654: CTO • MT 1664: CTO A8U A8F A8S • MT 1677: CTO A6A A6T D3J D4J E1J E2J E3J E4J • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	45K0408	N
21	Hard disk drive, SATA 320GB 7200 RPM/3Gb • MT 1654: CTO A2U A2F A2S • MT 1664: CTO A2J A7U A7F A7S • MT 1677: CTO A7G A7A A7T A8A A8T A9A A9T B2G B5G D1J D2J D5G • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	87H4891	N

Item #	FRUs	FRU #	CRU
21	Hard disk drive, SATA 320GB 7200 RPM/3Gb • MT 1654: CTO A2U A2F A2S • MT 1664: CTO A2J A7U A7F A7S • MT 1677: CTO A7G A7A A7T A8A A8T A9A A9T B2G B5G D1J D2J D5G • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	45K0409	N
21	Hard disk drive, SATA 500GB 7200RPM/3Gb/16M • MT 1654: CTO A1G • MT 1664: CTO A1U A1F A3U A3F A3S A4U A4F A4S A5U A5F A5S A6U A6F A6S A9J • MT 1677: CTO C1B A1U A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y B6U B6F B1G B3G B4G B7V B8H B8V B4B D6G D7G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO	45K0410	N
21	Hard disk drive, Seagate Pharaoh SATA 6.0Gb/s 500G • MT 1654: CTO A1G • MT 1664: CTO A1U A1F A3U A3F A3S A4U A4F A4S A5U A5F A5S A6U A6F A6S • MT 1677: CTO C1B A1U A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y B6U B6F B1G B3G B4G B7V B8H B8V B4B D6G D7G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO	03T7041	N
21	Hard disk drive, SATA 1TB 7200RPM/3Gb/32M • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	45K0412	N
21	Hard disk drive, Seagate Pharaoh SATA 6.0Gb/s 1000G • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T7042	N

Item #	FRUs	FRU #	CRU
21	Hard disk drive, 160G 2.5" SATA • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	45K0616	N
21	Hard disk drive, Seagate Pharaoh SATA 6.0Gb/s 250G • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO E1J E2J • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T7039	N
21	Hard disk drive, Seagate Pharaoh SATA 6.0Gb/s 320G • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO D5G • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T7040	N
22	Assembly_panel_bracket_SS • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9682	N
22	Assembly_panel_bracket_Chimei • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9681	N

Item #	FRUs	FRU #	CRU
23	20-inch 1600x900 CCFL panel • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T6429	N
23	20-inch 1600x900 CCFL panel • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T6431	N
24	YEC inverter • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T6434	N
25	Optical drive, SATA slim DVD-ROM • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO B7V D2J D4J E2J E3J • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	71Y5848	N
25	Optical drive, SATA slim Rambo • MT 1654: CTO A1G A2U A2F A2S • MT 1664: CTO A1U A1F A2J A3U A3F A3S A4U A4F A4S A5U A5F A5S A7U A7F A7S A8U A8F A8S A9J • MT 1677: CTO C1B A6A A6T A7G A7A A7T A8A A8T A9A A9T A1U A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y B6U B6F B1G B2G B3G B4G B5G B8H B8V D1J D3J B4B D5G D6G D7G E1J E4J • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	45K0433	N

Item #	FRUs	FRU #	CRU
27	Assembly-camera-kit • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9690	N
27	Assembly_non_camera_kit • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9691	N

Mechanical FRUs

The FRUs listed in the following tables are not illustrated.

FRUs	FRU #	CRU
Cables. • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9643	N
Card reader bezel • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9645	N
Card reader blank bezel • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9646	N

FRUs	FRU #	CRU
Hard disk drive bracket kit • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9653	N
Assembly front bezel; touch • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9669	N
Assembly touch panel • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9687	N
Card reader bezel assembly • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9693	N
Non card reader blank bezel • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9694	N

FRUs	FRU #	CRU
Tap kit • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9692	N
Assembly front bezel; touch • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T9669	N
Intrusion switch cable • MT 1654: all models • MT 1664: all models • MT 1677: all models • MT 1738: all models • MT 1739: all models • MT 1938: all models	03T6423	N

Keyboard and Mouse

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--US English China • MT 1654: CTO A2U • MT 1664: CTO A1U A3U A4U A5U A6U A7U A8U • MT 1677: CTO A6A A7A A8A A1U B6U • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1U A1L A1M A1A A1Q A1C A1H A1R A1E	41A5289	1
Slim USB--Arabic • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5290	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--A/F • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41A5291	1
Slim USB--B/F • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5292	1
Slim USB--Belgium English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5293	1
Slim USB--Brazilian Portuguese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1P	41A5294	1
Slim USB--Bulgarian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5295	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--Traditional Chinese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO C1B B7V • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1B A1V	41A5296	1
Slim USB--Czech (QWERTY or ABB) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5297	1
Slim USB--Danish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5298	1
Slim USB--Dutch • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5299	1
Slim USB--French • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5300	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--French Canadian • MT 1654: CTO A2F • MT 1664: CTO A1F A3F A4F A5F A6F A7U A8U • MT 1677: CTO B6F • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1F	41A5301	1
Slim USB--French Canadian • MT 1654: CTO A2F • MT 1664: CTO A1F A3F A4F A5F A6F A7U A8U • MT 1677: CTO B6F • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1F	41A5302	1
Slim USB--German • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5303	1
Slim USB--Greek • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5304	1
Slim USB--Greek/US • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5305	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--Hebrew • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5306	1
Slim USB--Hungarian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5307	1
Slim USB--Iceland • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5308	1
Slim USB--Italy • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5309	1
Slim USB--Japanese • MT 1654: CTO • MT 1664: CTO A9J • MT 1677: CTO D1J D2J D3J D4J E1J E2J E3J E4J • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1J	41A5310	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--Korean • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1K	41A5311	1
Slim USB--LA Spanish • MT 1654: CTO A2S • MT 1664: CTO A3S A4S A5S A6S A7S A8S • MT 1677: CTO A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1S A1D A1Y	41A5312	1
Slim USB--Norwegian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO • MT 1938: CTO A1G	41A5313	1
Slim USB--Polish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5314	1
Slim USB--Portuguese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5315	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--Romanian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5316	1
Slim USB--Romanian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5317	1
Slim USB--Russian/Cyrillic • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5318	1
Slim USB--Serbian/Cyrillic • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5319	1
Slim USB--Slovak • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5320	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--Spanish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5321	1
Slim USB--Swedish/Finnish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5322	1
Slim USB--SF/G • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5323	1
Slim USB--Thailand • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A6T A7T A8T • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1T	41A5324	1
Slim USB--Turkish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5325	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--Turkish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5326	1
Slim USB --UK English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5327	1
Slim USB--US European • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5328	1
Slim USB--Slovenian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	41A5329	1
Slim USB--Arabic (new) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	45J4880	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--Lithuanian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B3G B5G D5G D6G D7G • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1G	45J4896	1
Slim USB--India • MT 1654: CTO • MT 1664: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1Q	54Y8381	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--US English China • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8001	1
Fingerprint--Arabic • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8002	1
Fingerprint--A/F • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8003	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--B/F • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8004	1
Fingerprint--Belgium English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8005	1
Fingerprint--Brazilian Portuguese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8006	1
Fingerprint--Bulgarian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8007	1
Fingerprint--Traditional Chinese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8008	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Czech (QWERTY or ABB) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8009	1
Fingerprint--Danish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8010	1
Fingerprint--Dutch • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8011	1
Fingerprint--French • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8012	1
Fingerprint--French Canadian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8013	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--French Canadian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8014	1
Fingerprint--German • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8015	1
Fingerprint--Greek • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8016	1
Fingerprint--Greek/US • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8017	1
Fingerprint--Hebrew • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8018	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Hungarian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8019	1
Fingerprint--Iceland • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8020	1
Fingerprint--Italy • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8021	1
Fingerprint--Japanese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8022	1
Fingerprint--Korean • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8023	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--LA Spanish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8024	1
Fingerprint--Norwegian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8025	1
Fingerprint--Polish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8026	1
Fingerprint--Portuguese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8027	1
Fingerprint--Romanian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8039	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Russian/Cyrillic • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8028	1
Fingerprint--Serbian/Cyrillic • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8040	1
Fingerprint--Slovak • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8029	1
Fingerprint--Spanish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8030	1
Fingerprint--Swedish/Finnish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8031	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--SF/G • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8032	1
Fingerprint--Thailand • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8033	1
Fingerprint--Turkish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8041	1
Fingerprint--Turkish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8034	1
Fingerprint --UK English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8035	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--US European • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8036	1
Fingerprint--Slovenian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8037	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--US English China • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0038	1
Fingerprint--Arabic • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0039	1
Fingerprint--A/F • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0040	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--B/F • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0041	1
Fingerprint--Belgium English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0042	1
Fingerprint--Brazilian Portuguese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0043	1
Fingerprint--Bulgarian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0044	1
Fingerprint--Traditional Chinese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0045	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Czech (QWERTY or ABB) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0046	1
Fingerprint--Danish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0047	1
Fingerprint--Dutch • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0048	1
Fingerprint--French • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0049	1
Fingerprint--French Canadian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0050	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--French Canadian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0051	1
Fingerprint--German • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0052	1
Fingerprint--Greek • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0053	1
Fingerprint--Greek/US • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0054	1
Fingerprint--Hebrew • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0055	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Hungarian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0056	1
Fingerprint--Iceland • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0057	1
Fingerprint--Italy • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0058	1
Fingerprint--Japanese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0059	1
Fingerprint--Korean • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0060	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--LA Spanish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0061	1
Fingerprint--Norwegian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0062	1
Fingerprint--Polish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0063	1
Fingerprint--Portuguese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0064	1
Fingerprint--Romanian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0065	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Russian/Cyrillic • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0067	1
Fingerprint--Serbian/Cyrillic • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0068	1
Fingerprint--Slovak • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0069	1
Fingerprint--Spanish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0070	1
Fingerprint--Swedish/Finnish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0071	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--SF/G • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0072	1
Fingerprint--Thailand • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0073	1
Fingerprint--Turkish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0074	1
Fingerprint--Turkish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0075	1
Fingerprint --UK English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0076	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--US European • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0077	1
Fingerprint--Slovenian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	41R0078	1

Keyboard (Ultraslim wireless)	FRU #	CRU
Ultraslim wireless--US English China • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A8A A8T A9A A9T B8H • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	57Y4740	1
Ultraslim wireless--Arabic • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4741	1
Ultraslim wireless--A/F • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	57Y4742	1

Keyboard (Ultraslim wireless)	FRU #	CRU
Ultraslim wireless--B/F • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4743	1
Ultraslim wireless--Belgium English • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4744	1
Ultraslim wireless--Brazilian Portuguese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	57Y4745	1
Ultraslim wireless--Bulgarian • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4746	1
Ultraslim wireless--Traditional Chinese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO B8V B4B • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	57Y4747	1

Keyboard (Ultraslim wireless)	FRU #	CRU
Ultraslim wireless--Czech (QWERTY or ABB) • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4748	1
Ultraslim wireless--Danish • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4749	1
Ultraslim wireless--Dutch • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4750	1
Ultraslim wireless--French • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4751	1
Ultraslim wireless--French Canadian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	57Y4752	1

Keyboard (Ultraslim wireless)	FRU #	CRU
Ultraslim wireless--French Canadian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	57Y4753	1
Ultraslim wireless--German • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4754	1
Ultraslim wireless--Greek • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4755	1
Ultraslim wireless--Greek/US • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4756	1
Ultraslim wireless--Hebrew • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4757	1

Keyboard (Ultraslim wireless)	FRU #	CRU
Ultraslim wireless--Hungarian • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4758	1
Ultraslim wireless--Iceland • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4759	1
Ultraslim wireless--Italy • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4760	1
Ultraslim wireless--Japanese • MT 1654: CTO • MT 1664: CTO A2J • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	57Y4761	1
Ultraslim wireless--Korean • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	57Y4762	1

Keyboard (Ultraslim wireless)	FRU #	CRU
Ultraslim wireless--LA Spanish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4763	1
Ultraslim wireless--Norwegian • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4764	1
Ultraslim wireless--Polish • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4765	1
Ultraslim wireless--Portuguese • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4766	1
Ultraslim wireless--Russian/Cyrillic • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4767	1

Keyboard (Ultraslim wireless)	FRU #	CRU
Ultraslim wireless--Slovak • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4768	1
Ultraslim wireless--Spanish • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4769	1
Ultraslim wireless--Swedish/Finnish • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4770	1
Ultraslim wireless--SF/G • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4771	1
Ultraslim wireless--Thailand • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A9T • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	57Y4772	1

Keyboard (Ultraslim wireless)	FRU #	CRU
Ultraslim wireless--Turkish • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4773	1
Ultraslim wireless --UK English • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4774	1
Ultraslim wireless--US European • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4775	1
Ultraslim wireless--Slovenian • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B4G • MT 1738: CTO A3G • MT 1739: CTO • MT 1938: CTO	57Y4776	1
Ultraslim wireless--India • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03X8239	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB-US English • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9293	1
Slim new F5 USB-Arabic • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9294	1
Slim new F5 USB-Arabic/French • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9295	1
Slim new F5 USB-Belgium/French • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9296	1
Slim new F5 USB-Belgium/English • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9297	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB-Brazil/Portuguese • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9298	1
Slim new F5 USB-Bulgarian • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9299	1
Slim new F5 USB-Traditional Chinese • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9300	1
Slim new F5 USB-Czech (QWERTY or ABB) • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9301	1
Slim new F5 USB-Danish • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9302	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB-Dutch • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9303	1
Slim new F5 USB-French • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9304	1
Slim new F5 USB-French Canadian • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9305	1
Slim new F5 USB-French Canadian • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9306	1
Slim new F5 USB-German • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9307	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB-Greek • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9308	1
Slim new F5 USB-Greek/US • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9309	1
Slim new F5 USB-Hebrew • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9310	1
Slim new F5 USB-Hungarian • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9311	1
Slim new F5 USB-Iceland • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9312	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB-Italy • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9313	1
Slim new F5 USB-Japanese • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9314	1
Slim new F5 USB-Korean • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9315	1
Slim new F5 USB-LA Spanish • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9316	1
Slim new F5 USB-Norwegian • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9317	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB-Polish • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9318	1
Slim new F5 USB-Portuguese • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9319	1
Slim new F5 USB-Romanian • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9320	1
Slim new F5 USB-Russian/Cy • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9321	1
Slim new F5 USB-Serbian/Cyrilic • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9322	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB-Slovak • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9323	1
Slim new F5 USB-Spanish • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9324	1
Slim new F5 USB-Swedish/Finn • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9325	1
Slim new F5 USB-Swiss, F/G • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9326	1
Slim new F5 USB-Thailand • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9327	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB-Turkish • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9328	1
Slim new F5 USB-Turkish • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9329	1
Slim new F5 USB-UK English • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9330	1
Slim new F5 USB-US European • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9331	1
Slim new F5 USB-Slovenian +++ • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9332	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB-Arabic (new) • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9333	1
Slim new F5 USB-Lithuanian • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9334	1
Slim new F5 USB-Estonia • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9335	1
Slim new F5 USB-India • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	54Y9293	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- US English • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8201	1
Ultraslim plus KB/MS- Arabic • MT 1654: • MT 1664: • MT 1677: • MT 1738:	03X8202	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
• MT 1739: • MT 1938:		
Ultraslim plus KB/MS- Arabic/French • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8203	1
Ultraslim plus KB/MS- Belgium/French • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8204	1
Ultraslim plus KB/MS- Belgium/English • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8205	1
Ultraslim plus KB/MS- Brazil/Portuguese • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8206	1
Ultraslim plus KB/MS- Bulgarian • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8207	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- Traditional Chinese • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8208	1
Ultraslim plus KB/MS- Czech (QWERTY or ABB) • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8209	1
Ultraslim plus KB/MS- Danish • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8210	1
Ultraslim plus KB/MS- Dutch • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8211	1
Ultraslim plus KB/MS- French • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8212	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- French Canadian • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8214	1
Ultraslim plus KB/MS- French Canadian • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8213	1
Ultraslim plus KB/MS- German • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8215	1
Ultraslim plus KB/MS- Greek • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8216	1
Ultraslim plus KB/MS- Greek/US • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8217	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- Hebrew • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8218	1
Ultraslim plus KB/MS- Hungarian • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8219	1
Ultraslim plus KB/MS- Iceland • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8220	1
Ultraslim plus KB/MS- Italy • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8221	1
Ultraslim plus KB/MS- Japanese • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8222	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- Korean • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8223	1
Ultraslim plus KB/MS- LA Spanish • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8224	1
Ultraslim plus KB/MS- Norwegian • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8225	1
Ultraslim plus KB/MS- Polish • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8226	1
Ultraslim plus KB/MS- Portuguese • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8227	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- Russian/Cy • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8228	1
Ultraslim plus KB/MS- Slovak • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8229	1
Ultraslim plus KB/MS- Spanish • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8230	1
Ultraslim plus KB/MS- Swedish/Finn • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8231	1
Ultraslim plus KB/MS- Swiss, F/G • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8232	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- Thailand • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8233	1
Ultraslim plus KB/MS- Turkish • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8234	1
Ultraslim plus KB/MS- UK English • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8235	1
Ultraslim plus KB/MS- US European • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8236	1
Ultraslim plus KB/MS- Slovenian +++ • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8237	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- LA Spanish (without battery) • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8224	1
Ultraslim plus KB/MS- Brazil/Portuguese (without battery) • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8206	1
Ultraslim plus KB/MS- Nodic • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	0A34324	1
Ultraslim plus KB/MS- India • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	03X8239	1

Mice	FRU #	CRU
Lenovo enhanced optical USB mouse • MT 1654: CTO • MT 1664: CTO A1U A1F A3U A3F A3S A4U A4F A4S A5U A5F A5S A6U A6F A6S A7U A7F A7S A8U A8F A8S A9J • MT 1677: CTO C1B A6A A6T A7G A7A A7T A8A A8T A1U A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y B6U B6F B3G B5G B7V D1J D2J D3J D4J D5G D6G D7G E1J E2J E3J E4J • MT 1738: CTO A1G • MT 1739: CTO A1G • MT 1938: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	45J4889	1

Adapters and miscellaneous FRUs

Adapters and miscellaneous FRUs	FRU #	CRU
BCM BCM43227 2x2 MC • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T9015	N
DP to DVI dongle 200mm • MT 1654: CTO • MT 1664: CTO A2J • MT 1677: CTO D1J D2J D3J D4J • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	43N9160	N
Intel-6205N wireless Tylar Peak • MT 1654: • MT 1664: • MT 1677: • MT 1738: • MT 1739: • MT 1938:	60Y3253	N

Power Cords

Power Cords --primary	FRU #	CRU
Line Cord-US/ Canada/ Barbados/ Belize / Bolivia/ Costa Rica/ Columbia/ Dominican Republic/ Ecuador/ ElSalvador/ Guatemala/ Haiti/ Honduras/ Jamaica/ Mexico/ Netherlands Antilles/ Nicaragua/ Panama/ Philippines/ Peru/Trinidad & Tobago/ Venezuela/ (Thainland) • MT 1654: CTO A2U A2F A2S • MT 1664: CTO A1U A1F A3U A3F A3S A4U A4F A4S A5U A5F A5S A6U A6F A6S A7U A7F A7S A8U A8F A8S • MT 1677: CTO A6A A6T A7A A7T A8A A8T A9A A9T A1U A1S A1D A2S A2D A3S A3D A4S A4D A5S A5D B6U B6F • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1U A1F A1S A1D A1L A1A A1T	41R3184	1
Line Cord - China • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO	41R3256	

Power Cords --primary	FRU #	CRU
• MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1C		
Line Cord - Japan • MT 1654: CTO • MT 1664: CTO A2J A9J • MT 1677: CTO D1J D2J D3J D4J E1J E2J E3J E4J • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1E A1J	41R3248	1
Line Cord - Brazil • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1P	45J9595	1
Line Cord - LA (High Voltage) Argentina, Paraguay, Uruguay • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A1Y A2Y A3Y A4Y A5Y • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1Y A1L	41R3176	1
Line Cord - ANZ. Australia/New Zealand • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1M	41R3196	1
Line Cord - Korea • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1K A1R	41R3260	1

Power Cords --primary	FRU #	CRU
Line Cord - UK/ Hong Kong/ Singapore/ Malaysia/ Bahrain/ Botswana/ Burma/ Brunei / Cyprus/ Ghana/ Ireland/ Jordan/ Kenya/ Kuwait/ Malta/ Nigeria/ Oman/ Qatar/ United Arab Emirates/ Trinidad and Tobago/ Saudi Arabia • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO C1B A6A A7G A7A A8A A9A B1G B2G B3G B4G B5G B8H B4B D5G D6G D7G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1G A1A A1B A1H	41R3224	1
Line Cord - Taiwan • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO B7V B8V • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1V	41R3278	1
Line Cord - Italy/ Chile/Libya • MT 1654: CTO A1G A2S • MT 1664: CTO A4S A5S A6S • MT 1677: CTO A7G A1S A1Y A2S A2Y A3S A3Y A4S A4Y A5S A5Y B1G B2G B3G B4G B5G D5G D6G D7G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1Y A1L A1G	41R3232	1
Line Cord - Denmark • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO A7G B1G B2G B3G B4G B5G D5G D6G D7G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1G	41R3212	1
Line Cord - Switzerland, Liechtenstein • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO A7G B1G B2G B3G B4G B5G D5G D6G D7G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1G	41R3228	1

Power Cords --primary	FRU #	CRU
Line Cord - Israel • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO A7G B1G B2G B3G B4G B5G D5G D6G D7G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1G	41R3236	1
Line Cord - South Africa/ Bangladesh / Namibia/ Nepal/ Pakistan/ Sri Lanka./ Swaziland / Uganda • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO A6A A7G A7A A8A A9A B1G B2G B3G B4G B5G D5G D6G D7G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1G A1M A1A	41R3220	1
Line Cord - India • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1Q	41R3341	1
Line Cord - Albania/ Algeria/ Angola/ Austria / Belarus/ Belgium/ Bosnia/ Bulgaria/ Croatia/ Cambodia/ Cote d'ivoire/ Czech/ Estonia/ Egypt/ Finland/ France/ Georgia/ Germany/ Greece/ Herzegovina/ Hungary/ Indonesia/ Iceland/ Kazakhstan/ Kyrgyzstan / Laos/ Latvia/ Lebanon/ Lithuania/ Luxembourg/ Macao/ Macedonia/ Mauritius/ Moldova/ Morocco/ Netherlands/ Norway/ Poland/ Portugal/ Romania/ Spain/ Sweden/ Serbia/ Slovakia/ Slovenia/ Vietnam/ Tadzhikistan/ Turkmenistan/ Turkey/ Tunisia/ Paraguay/ Russia/ Ukraine/ Uzbekistan/ Vietnam • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A6A A7A A8A A9A • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1A	41R3208	1

Power Cords --secondary	FRU #	CRU
Line Cord-US/ Canada/ Barbados/ Belize / Bolivia/ Costa Rica/ Columbia/ Dominican Republic/ Ecuador/ ElSalvador/ Guatemala/ Haiti/ Honduras/ Jamaica/ Mexico/ Netherlands Antilles/ Nicaragua/ Panama/ Philippines/ Peru/Trinidad & Tobago/ Venezuela/ (Thainland) • MT 1654: CTO A2U A2F A2S • MT 1664: CTO A1U A1F A3U A3F A3S A4U A4F A4S A5U A5F A5S A6U A6F A6S A7U A7F A7S A8U A8F A8S • MT 1677: CTO A6A A6T A7A A7T A8A A8T A9A A9T A1U A1S A1D A2S A2D A3S A3D A4S A4D A5S A5D B6U B6F • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1U A1F A1S A1D A1L A1A A1T	41R3185	1
Line Cord - China • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1C	41R3257	1
Line Cord - Japan • MT 1654: CTO • MT 1664: CTO A2J A9J • MT 1677: CTO D1J D2J D3J D4J E1J E2J E3J E4J • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1E A1J	41R3249	1
Line Cord - Brazil • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1P	41R3271	1
Line Cord - LA (High Voltage) Argentina, Paraguay, Uruguay • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A1Y A2Y A3Y A4Y A5Y • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1Y A1L	41R3177	1

Power Cords --secondary	FRU #	CRU
Line Cord - ANZ. Australia/New Zealand • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1M	41R3197	1
Line Cord - Korea • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1K A1R	41R3261	1
Line Cord - UK/ Hong Kong/ Singapore/ Malaysia/ Bahrain/ Botswana/ Burma/ Brunei / Cyprus/ Ghana/ Ireland/ Jordan/ Kenya/ Kuwait/ Malta/ Nigeria/ Oman/ Qatar/ United Arab Emirates/ Trinidad and Tobago/ Saudi Arabia • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO C1B A6A A7G A7A A8A A9A B1G B2G B3G B4G B5G B8H B4B D5G D6G D7G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1G A1A A1B A1H	41R3225	1
Line Cord - Taiwan • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO B7V B8V • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1V	41R3279	1
Line Cord - Italy/ Chile/Libya • MT 1654: CTO A1G A2S • MT 1664: CTO A4S A5S A6S • MT 1677: CTO A7G A1S A1Y A2S A2Y A3S A3Y A4S A4Y A5S A5Y B1G B2G B3G B4G B5G D5G D6G D7G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1Y A1L A1G	41R3233	1

Power Cords --secondary	FRU #	CRU
Line Cord - Denmark • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO A7G B1G B2G B3G B4G B5G D5G D6G D7G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1G	41R3213	1
Line Cord - Switzerland, Liechtenstein • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO A7G B1G B2G B3G B4G B5G D5G D6G D7G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1G	41R3229	1
Line Cord - Israel • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO A7G B1G B2G B3G B4G B5G D5G D6G D7G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1G	41R3237	1
Line Cord - South Africa/ Bangladesh / Namibia/ Nepal/ Pakistan/ Sri Lanka./ Swaziland / Uganda • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO A6A A7G A7A A8A A9A B1G B2G B3G B4G B5G D5G D6G D7G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO A1G • MT 1938: CTO A1G A1M A1A	41R3221	1
Line Cord - India • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1Q	41R3175	1
Line Cord - Albania/ Algeria/ Angola/ Austria / Belarus/ Belgium/ Bosnia/ Bulgaria/ Croatia/ Cambodia/ Cote d'ivoire/ Czech/ Estonia/ Egypt/ Finland/ France/ Georgia/ Germany/ Greece/ Herzegovina/ Hungary/ Indonesia/ Iceland/ Kazakhstan/ Kyrgyzstan / Laos/ Latvia/ Lebanon/ Lithuania/ Luxembourg/ Macao/ Macedonia/ Mauritius/ Moldova/ Morocco/ Netherlands/ Norway/ Poland/ Portugal/ Romania/ Spain/ Sweden/ Serbia/ Slovakia/ Slovenia/ Vietnam/ Tadzhikistan/ Turkmenistan/ Turkey/ Tunisia/ Paraguay/ Russia/ Ukraine/ Uzbekistan/ Vietnam • MT 1654: CTO	41R3209	1

Power Cords --secondary	FRU #	CRU
• MT 1664: CTO • MT 1677: CTO A6A A7A A8A A9A • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1A		

Recovery discs

Windows 7 Starter 32 SP1 Recovery CD

Windows 7 Starter 32 SP1 Recovery CD	FRU #	CRU
US English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2732	1
Spanish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2730	1
Arabic/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2724	1
Russian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2729	1

Windows 7 Starter 32 SP1 Recovery CD	FRU #	CRU
Turkish/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2731	1
Brazilian Portuguese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2725	1
India English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2726	1
French • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2727	1
Portuguese/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2728	1

Windows 7 Home Basic 32 SP1 Recovery CD

Windows 7 Home Basic 32 SP1 Recovery CD	FRU #	CRU
US English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2742	1
Spanish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2739	1
Arabic/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2733	1
Russian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2738	1
Turkish/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2741	1

Windows 7 Home Basic 32 SP1 Recovery CD	FRU #	CRU
Serbian-Latin/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2740	1
Brazilian Portuguese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2734	1
India English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2735	1
French • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2736	1
Portuguese/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2737	1

Windows 7 Home Premium 32 SP1 Recovery CD

Windows 7 Home Premium 32 SP1 Recovery CD	FRU #	CRU
US English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2755	1
Chinese-Traditional (TaiWan)/ English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2744	1
Russian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2753	1
Korean/ English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2751	1
Arabic/ English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2743	1

Windows 7 Home Premium 32 SP1 Recovery CD	FRU #	CRU
India English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2745	1
French • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2746	1
German • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2747	1
Hebrew/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2748	1
Italian/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2749	1

Windows 7 Home Premium 32 SP1 Recovery CD	FRU #	CRU
Japanese/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2750	1
Portuguese/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2752	1
Spanish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2754	1
C&L Nordics (DK/FI/SV/NO/EN) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2756	1
C&L EMEA (NL/FR/GR/IT/EN) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2757	1
C&L Hong Kong (HK CS EN) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2758	1

Windows 7 Home Premium 64 SP1 Recovery CD

Windows 7 Home Premium 64 SP1 Recovery CD	FRU #	CRU
US English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2792	1
Chinese-traditional/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2788	1
India English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2789	1
French • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2790	1
Korean/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2791	1
C Hong Kong (HK CS EN) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO	03T2793	1

Windows 7 Home Premium 64 SP1 Recovery CD	FRU #	CRU
• MT 1739: CTO • MT 1938: CTO		

Windows 7 Professional 32 SP1 Recovery CD

Windows 7 Professional 32 SP1 Recovery CD	FRU #	CRU
US English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G A7A A7T A8A A8T A9A A9T A1U B5G B8H • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2781	1
Spanish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B5G D5G • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2778	1
Chinese-Simplified • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2761	1
Chinese-Traditional (Taiwan) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO A7G B5G D5G • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2762	1
Russian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2776	1

Windows 7 Professional 32 SP1 Recovery CD	FRU #	CRU
Korean/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2772	1
Arabic/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2759	1
Brazilian Portuguese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2760	1
Czech/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2763	1
French • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2765	1

Windows 7 Professional 32 SP1 Recovery CD	FRU #	CRU
Greek/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2766	1
Greek/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2764	1
Hungarian/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2769	1
Polish/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2773	1
German • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2767	1

Windows 7 Professional 32 SP1 Recovery CD	FRU #	CRU
Portuguese/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2774	1
Romanian/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2775	1
Italian/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2770	1
Slovakian/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2777	1
Turkish/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2780	1

Windows 7 Professional 32 SP1 Recovery CD	FRU #	CRU
Japanese/English • MT 1654: CTO • MT 1664: CTO A9J • MT 1677: CTO E1J E2J E3J E4J • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2771	1
C&L Nordics (DK/FI/SV/NO/EN) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2782	1
C&L EMEA (NL/FR/GR/IT/EN) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2783	1
C&L Hong Kong (HK CS EN) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2785	1
C&L Croatian (EN/SL/CR) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2784	1

Windows 7 Professional 32 SP1 Recovery CD	FRU #	CRU
Hebrew/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G • MT 1938: CTO	03T2768	1
Serbian-Latin/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO A1G	03T2779	1
C&L EMEA (NL/FR/GR/IT/EN) • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2818	1
C&L Hong Kong (HK CS EN) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1B	03T2819	1
C&L Croatian (EN/SL/CR) • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2820	1

Windows 7 Professional 64 SP1 Recovery CD

Windows 7 Professional x64 SP1	FRU #	CRU
US English • MT 1654: CTO A1G A2U • MT 1664: CTO A1U A3U A4U A5U A6U A7U A8U • MT 1677: CTO B6U B1G B2G B3G B4G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1U A1L A1G A1M A1A A1Q A1T A1H A1R A1E	03T2816	1
Arabic • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B3G B4G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2794	1
Chinese-Traditional (Taiwan)/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1V	03T2797	1
Russian • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B3G B4G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2811	1
Polish • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B3G B4G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2808	1

Windows 7 Professional x64 SP1	FRU #	CRU
Korean • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1K	03T2807	1
Hebrew/English • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B3G B4G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2803	1
Greek/English • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B3G B4G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2801	1
Turkish/English • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B3G B4G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2815	1
Croatian/Slovenian • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B3G B4G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2820	1

Windows 7 Professional x64 SP1	FRU #	CRU
Romanian/English • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B3G B4G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2810	1
Hungarian/English • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B3G B4G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2804	1
Czech/English • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B3G B4G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2798	1
Slovakian/English • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B3G B4G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2812	1
Portuguese/English • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO B1G B2G B3G B4G • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2809	1

Windows 7 Professional x64 SP1	FRU #	CRU
Serbian-Latin/English • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2814	1
Brazilian Portuguese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1P	03T2795	1
Simplified Chinese • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1C	03T2796	1
India English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1Q	03T2799	1
Italian/English • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2805	1

Windows 7 Professional x64 SP1	FRU #	CRU
Japanese/English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO A1J	03T2806	1
French • MT 1654: CTO A1G • MT 1664: CTO A4F A5F A6F A7F A8F • MT 1677: CTO • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1F	03T2800	1
C&L Nordics (DK/FI/SV/NO/EN) • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2817	1
German • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2802	1
Spanish • MT 1654: CTO A1G • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO A1G A2G A3G • MT 1739: CTO • MT 1938: CTO A1G	03T2813	1

Windows 7 Ultimate 32 SP1 Recovery CD

Windows 7 Ultimate 32 SP1 Recovery CD	FRU #	CRU
India English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2787	1
US English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2786	1

Windows 7 Ultimate 64 SP1 Recovery CD

Windows 7 Ultimate 64 SP1 Recovery CD	FRU #	CRU
India English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2821	1
US English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03T2822	1

Windows XP Professional 32 Recovery CD

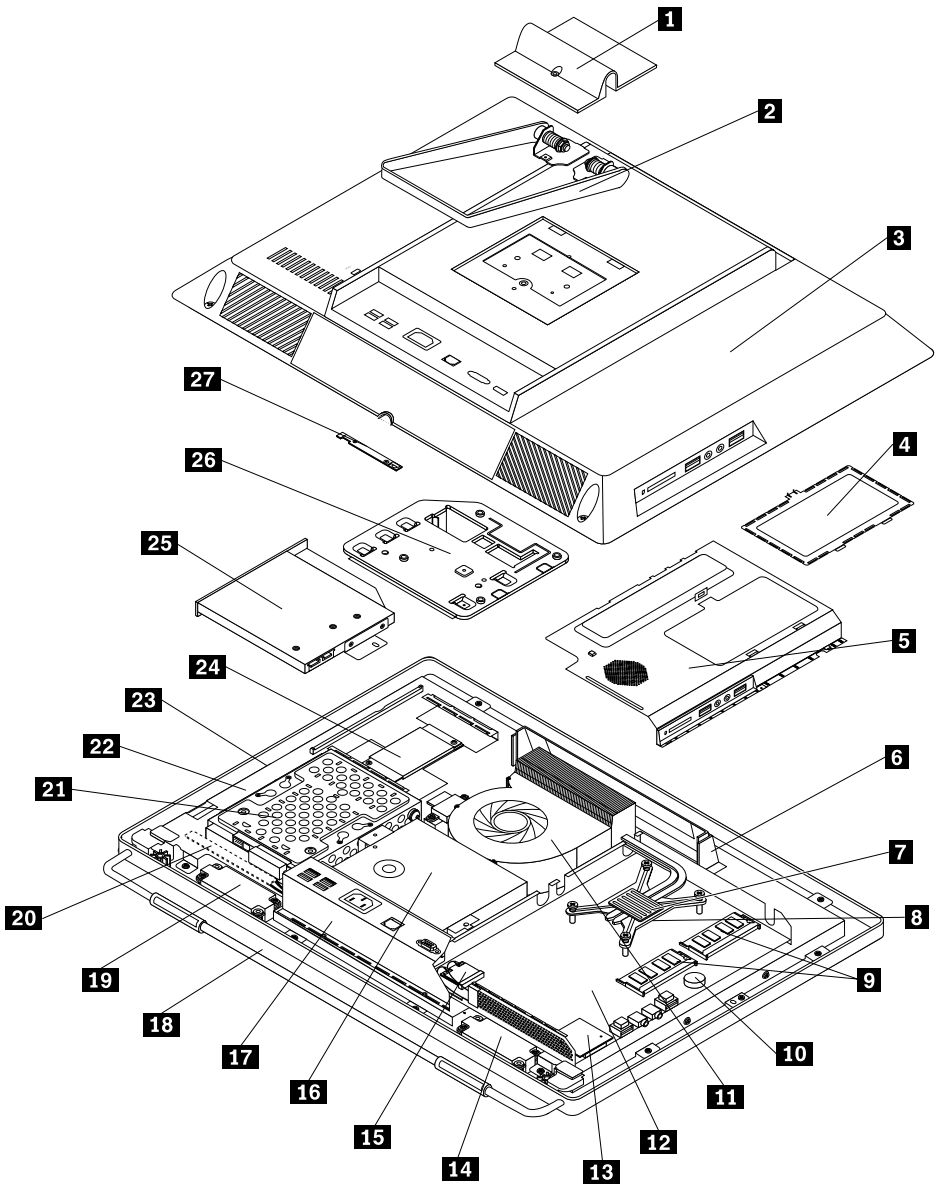
Note: The Windows XP Professional recovery DVDs are available only for models with a valid Microsoft Windows XP Professional certificate of authenticity (COA) affixed to the system. Due to a Microsoft licensing limitation, if a model came with Windows XP Professional preinstalled from the factory, but has either a Windows 7 or Windows Vista COA affixed to the system, that model is eligible only for recovery DVDs that match the operating system specified on the COA.

Windows XP Professional 32 Recovery CD	FRU #	CRU
US English • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03W7498	1
Chinese-Traditional (Hong Kong) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03W7485	1
Chinese-Traditional (Taiwan) • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03W7478	1
Russian • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03W7494	1
Polish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03W7492	1

Windows XP Professional 32 Recovery CD	FRU #	CRU
Turkish • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03W7497	1
Czech • MT 1654: CTO • MT 1664: CTO • MT 1677: CTO • MT 1738: CTO • MT 1739: CTO • MT 1938: CTO	03W7479	1

Overall: MT 1741, 1761, 1762, 1782, 1837, and 1962

The Fru list below is for MTs: 1741, 1761, 1762, 1782, 1837, and 1962



Item #	FRUs	FRU #	CRU
2	Assembly monitor stand, touch and non-touch • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9686	N
3	Assembly rear cover, touch and non-touch • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models	03T9670	N

Item #	FRUs	FRU #	CRU
	• MT 1837: all models • MT 1962: all models		
7	Microprocessor cooler • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9619	N
8	Microprocessor, Ci3 2100 Sandy Bridge 3MB 2c FCLGA 3.1GHZ 65W • MT 1741: CTO A2J • MT 1761: CTO A1U A1F A4J A5J A7J A8J • MT 1762: CTO A8G B2G D1J D2J • MT 1782: CTO A6A A6T A7A A7T A2S A2D A2Y A5S A5D A5Y C3U C3F B5G B7G A9G C5V D2B D5J D6J E1J E2J G1V • MT 1837: CTO A1G • MT 1962: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	03T8011	N
8	Microprocessor, Ci3 2120 Sandy Bridge 3MB 2c FCLGA 3.3GHz 65W • MT 1741: CTO A7G B2J B4J • MT 1761: CTO B1U B1F B1S C1J C2J C3J C4J D3J D4J D5J D6J D9U D9F D9S • MT 1762: CTO E1J E2J • MT 1782: CTO D1B E6A E6T E7A E7T E8A E8T E9G G3G G4G H3S H3Y C6J C8J C9J H1J I3S I3D I3Y I4S I4D I4Y • MT 1837: CTO • MT 1962: CTO	03T8010	N
8	Microprocessor, Ci5 2400S Sandy Bridge 6MB 4c FCLGA 2.5GHZ 65W • MT 1741: CTO A3J B3J • MT 1761: CTO A6J A9J C6U C6S C6F D1J D2J • MT 1762: CTO B3B B3H D3J D4J E3J E4J • MT 1782: CTO A8A A8T A3S A3D A3Y C4U C4F C7V D7J D8J E3J E4J H4S H4Y I6S I6D I6Y I8J I9J K1J K2J • MT 1837: CTO • MT 1962: CTO	03T8017	N
8	Microprocessor, Ci5 2500S Sandy Bridge 8MB 4c FCLGA 2.7GHZ 65W • MT 1741: CTO • MT 1761: CTO B4U B4F B4S C7U C7S C7F • MT 1762: CTO • MT 1782: CTO A4S A4D A4Y B9G H2U H2F H2S I7S I7D I7Y • MT 1837: CTO • MT 1962: CTO	03T8016	N

Item #	FRUs	FRU #	CRU
8	Microprocessor, G620 Sandy Bridge 3MB 2c FCLGA 2.6GHZ 65W HD graphics • MT 1741: CTO A1J A5G • MT 1761: CTO A3U A3F • MT 1762: CTO A5G • MT 1782: CTO A1S A1D A1Y C1U C1F B6G E5B • MT 1837: CTO • MT 1962: CTO	03T6226	N
8	Microprocessor, G840 Sandy Bridge 3MB 2c FCLGA 2.8GHZ 65W HD graphics • MT 1741: CTO A6G • MT 1761: CTO A2U A2F • MT 1762: CTO A6G A7G D8G • MT 1782: CTO C2U C2F • MT 1837: CTO • MT 1962: CTO	03T6225	N
8	Microprocessor, G850 Sandy Bridge 3MB 2c FCLGA 2.9GHz 65W HD graphics • MT 1741: CTO • MT 1761: CTO B6U B6F B6S • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T6224	N
8	Microprocessor, Ci7 2600S Sandy Bridge 8MB 4c FCLGA 2.8GHZ 65W vPro • MT 1741: CTO • MT 1761: CTO C5U C5S C5F • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T8015	N
8	Microprocessor, Ci3-2130,3.40GHz/3M/65W, dual core • MT 1741: CTO • MT 1761: CTO B5U B5S B5F B7U B7S B7F • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T8358	N

Item #	FRUs	FRU #	CRU
8	Microprocessor, Pentium G860, 3.0GHz/3M/65W, 2C • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T8361	N
8	Microprocessor, Pentium G630, 2.70GHz/3M/65W, 2C • MT 1741: CTO B1G • MT 1761: CTO B2F B2S B2U D8U D8F D8S • MT 1762: CTO • MT 1782: CTO G5G G6G F2A F2T F3A F3T I1S I1D I1Y I2S I2D I2Y I5S I5D I5Y • MT 1837: CTO • MT 1962: CTO	03T8360	N
8	Microprocessor, G540 Sandy Bridge 2MB 2c FCLGA 2.5GHZ 65W • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T8354	N
8	Microprocessor, G530 Sandy Bridge 2MB 2c FCLGA 2.4GHZ 65W • MT 1741: CTO A8J A9J • MT 1761: CTO B3U B3F B3S D7U D7F D7S • MT 1762: CTO D5J D6J • MT 1782: CTO F4J F5J • MT 1837: CTO • MT 1962: CTO	03T8356	N
8	Microprocessor, G440 Sandy Bridge 1MB 2c FCLGA 1.6GHZ 35W • MT 1741: CTO • MT 1761: CTO B8U B8F B8S • MT 1762: CTO • MT 1782: CTO G2G • MT 1837: CTO • MT 1962: CTO	03T8355	N

Item #	FRUs	FRU #	CRU
9	Memory modules, 1GB PC3-10600 1333MHz DDR3 SoDIMM • MT 1741: CTO A9J • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	64Y6650	N
9	Memory modules, 2GB PC3-10600 1333MHz DDR3 SoDIMM • MT 1741: CTO A1J A2J A3J A5G A8J B2J B3J B4J • MT 1761: CTO A2U A2F A3U A3F A4J A5J A6J A7J A8J A9J B3U B3F B3S B6U B6S B6F B8U B8S B8F C1J C2J C3J C4J B2U B2F B2S D1J D2J D3J D4J D5J D6J D7U D7F D7S D8U D8F D8S • MT 1762: CTO B3B B3H A5G A6G A7G A8G B2G D1J D2J D3J D4J D5J D6J D8G E1J E2J E3J E4J • MT 1782: CTO D1B A6A A6T A7A A7T A8A A8T A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y C1U C1F C2U C2F B6G A9G C5V C7V D2B D5J D6J D7J D8J E5B E6A E6T E1J E2J E3J E4J E9G G2G G5G G6G F4J F5J C6J C8J C9J H1J F2A F2T F3A F3T I1S I1D I1Y I2S I2D I2Y I3S I3D I3Y I8J I9J K1J K2J • MT 1837: CTO • MT 1962: CTO	64Y6651	N
9	Memory modules, 4GB PC3-10600 1333MHz DDR3 SoDIMM • MT 1741: CTO A6G A7G B1G • MT 1761: CTO A1U A1F B1U B1F B1S B4U B4F B4S B5U B5S B5F B7U B7S B7F C5U C5S C5F C6U C6F C6S C7U C7F C7S D9U D9F D9S • MT 1762: CTO • MT 1782: CTO C3U C3F C4U C4F B5G B7G B9G E7A E7T E8A E8T G1V G3G G4G H3Y H3S H4S H4Y H2U H2S H2F I4S I4D I4Y I5S I5D I5Y I6S I6D I6Y I7S I7D I7Y • MT 1837: CTO A1G • MT 1962: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	89Y9225	N
11	110x110x25mm microprocessor fan • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9620	N

Item #	FRUs	FRU #	CRU
11	110x110x25mm microprocessor fan • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9684	N
12	System board, with TPM card • MT 1741: CTO A1J A2J A3J A5G A6G A7G A8J A9J B1G B2J B3J B4J • MT 1761: CTO A1U A1F A2U A2F A3U A3F A4J A5J A6J B1U B1F B1S A7J A8J A9J B3U B3F B3S B4U B4F B4S B5U B5S B5F B6U B6F B6S B7U B7S B7F B8U B8S B8F C5U C5S C5F C6U C6F C6S C7U C7F C7S C1J C2J C3J C4J B2U B2F B2S D1J D2J D3J D4J D5J D6J D7U D7F D7S D8U D8F D8S D9U D9F D9S • MT 1762: CTO B3B B3H A5G A6G A7G A8G B2G D1J D2J D3J D4J D5J D6J D8G E1J E2J E3J E4J • MT 1782: CTO D1B A6A A6T A7A A7T A8A A8T A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y C1U C1F C2U C2F C3U C3F C4U C4F B5G B6G B7G B9G A9G C5V C7V D2B D5J D6J D7J D8J E5B E6A E6T E7A E7T E8A E8T E1J E2J E3J E4J E9G G1V G2G G3G G4G G5G G6G F4J F5J H3S H3Y H4S H4Y H2U H2S H2F C6J C8J C9J H1J F2A F2T F3A F3T I1S I1D I1Y I2S I2D I2Y I3S I3D I3Y I4S I4D I4Y I5S I5D I5Y I6S I6D I6Y I7S I7D I7Y I8J I9J K1J K2J • MT 1837: CTO A1G • MT 1962: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	03T6422	N
12	System board, without TPM card • MT 1741: CTO A5G A6G A7G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO E9G G2G G3G G4G G5G G6G • MT 1837: CTO • MT 1962: CTO	03T6441	N
13	7 in 1 card reader • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T9016	N

Item #	FRUs	FRU #	CRU
15	Intel-1000 wireless Condor Peak • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	60Y3241	N
16	Power supply assembly, 150w 85+ AIO PSU • MT 1741: CTO A1J A2J A3J A4J A5G A6G A7G A8G A9G B1G B2J B3J B4J • MT 1761: CTO A1U A1F A2U A2F A3U A3F A4J A5J A6J B1U B1F B1S A7J A8J A9J B3U B3F B3S B4U B4F B4S B5U B5S B5F B6U B6F B6S B7U B7S B7F B8U B8S B8F C5U C5S C5F C6U C6F C6S C7U C7F C7S C1J C2J C3J C4J B2U B2F B2S D1J D2J D3J D4J D5J D6J D7U D7F D7S D8U D8F D8S D9U D9F D9S • MT 1762: CTO B3B B3H A5G A6G A7G A8G B2G D1J D2J D3J D4J D5J D6J D8G E1J E2J E3J E4J • MT 1782: CTO D1B A6A A6T A7A A7T A8A A8T A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y C1U C1F C2U C2F C3U C3F C4U C4F B5G B6G B7G B9G A9G C5V C7V D2B D5J D6J D7J D8J E5B E6A E6T E7A E7T E8A E8T E1J E2J E3J E4J E9G G1V G2G G3G G4G G5G G6G F4J F5J H3S H3Y H4S H4Y H2U H2S H2F C6J C8J C9J H1J F2A F2T F3A F3T I1S I1D I1Y I2S I2D I2Y I3S I3D I3Y I4S I4D I4Y I5S I5D I5Y I6S I6D I6Y I7S I7D I7Y I8J I9J K1J K2J • MT 1837: CTO A1G • MT 1962: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	03T9022	N
17	Rear I/O kit with DP • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T6424	N
17	Rear I/O with DP + COM • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9031	N

Item #	FRUs	FRU #	CRU
17	Assembly rear_I/O_bracket_without_Com • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9667	N
17	Assembly rear_I/O_bracket_with_Com • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9666	N
18	Assembly frame stand, touch and non-touch • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9685	N
21	Hard disk drive, SATA 250GB 7200RPM/3Gb/8M • MT 1741: CTO A1J A8J A9J • MT 1761: CTO D7U D7F D7S D8U D8F D8S D9U D9F D9S • MT 1762: CTO A5G D1J D2J D5J D6J E1J E2J E3J E4J • MT 1782: CTO A6A A6T C1U C1F D5J D6J E1J E2J G2G F4J F5J C6J C8J C9J H1J F2A F2T F3A F3T I8J I9J K1J K2J • MT 1837: CTO • MT 1962: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	40Y9036	N
21	Hard disk drive, SATA 250GB 7200RPM/3Gb/8M • MT 1741: CTO A1J A8J A9J • MT 1761: CTO D7U D7F D7S D8U D8F D8S D9U D9F D9S • MT 1762: CTO A5G D1J D2J D5J D6J E1J E2J E3J E4J • MT 1782: CTO A6A A6T C1U C1F D5J D6J E1J E2J G2G F4J F5J C6J C8J C9J H1J F2A F2T F3A F3T I8J I9J K1J K2J • MT 1837: CTO • MT 1962: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	45K0408	N

Item #	FRUs	FRU #	CRU
21	Hard disk drive, SATA 320GB 7200 RPM/3Gb • MT 1741: CTO A2J A3J A5G B2J • MT 1761: CTO A2U A2F A3U A3F A4J A5J A6J A7J A8J A9J B3U B3F B3S C6U C6F C6S C7U C7F C7S C1J C2J C3J C4J B2U B2F B2S • MT 1762: CTO A6G A7G A8G B2G D3J D4J D8G • MT 1782: CTO A7A A7T A8A A8T C2U C2F B6G B7G A9G D7J D8J E3J E4J E9G G1V H2U H2S H2F • MT 1837: CTO A1G • MT 1962: CTO	87H4891	N
21	Hard disk drive, SATA 320GB 7200 RPM/3Gb • MT 1741: CTO A2J A3J A5G B2J • MT 1761: CTO A2U A2F A3U A3F A4J A5J A6J A7J A8J A9J B3U B3F B3S C6U C6F C6S C7U C7F C7S C1J C2J C3J C4J B2U B2F B2S • MT 1762: CTO A6G A7G A8G B2G D3J D4J D8G • MT 1782: CTO A7A A7T A8A A8T C2U C2F B6G B7G A9G D7J D8J E3J E4J E9G G1V H2U H2S H2F • MT 1837: CTO A1G • MT 1962: CTO	45K0409	N
21	Hard disk drive, SATA 500GB 7200RPM/3Gb/16M • MT 1741: CTO A6G A7G B1G B3J B4J • MT 1761: CTO A1U A1F B1U B1F B1S B4U B4F B4S C5U C5S C5F D1J D2J D3J D4J D5J D6J • MT 1762: CTO B3B B3H • MT 1782: CTO D1B A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y C3U C3F C4U C4F B5G B9G C5V C7V D2B E5B E6A E6T E7A E7T E8A E8T G3G G4G G5G G6G H3S H3Y H4S H4Y I1S I1D I1Y I2S I2D I2Y I3S I3D I3Y I4S I4D I4Y I5S I4D I4Y I5S I5D I5Y I6S I6D I6Y I7S I7D I7Y • MT 1837: CTO • MT 1962: CTO	45K0410	N
21	Hard disk drive, Seagate Pharaoh SATA 6.0Gb/s 500G • MT 1741: CTO A6G A7G • MT 1761: CTO A1U A1F B1U B1F B1S B4U B4F B4S C5U C5S C5F • MT 1762: CTO B3B B3H • MT 1782: CTO D1B A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y C3U C3F C4U C4F B5G B9G C5V C7V D2B E5B E6A E6T E7A E7T E8A E8T G3G G4G G5G G6G H3S H3Y H4S H4Y • MT 1837: CTO • MT 1962: CTO	03T7041	N

Item #	FRUs	FRU #	CRU
21	Hard disk drive, SATA 1TB 7200RPM/3Gb/32M • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	45K0412	N
21	Hard disk drive, Seagate Pharaoh SATA 6.0Gb/s 1000G • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T7042	N
21	Hard disk drive, 160G 2.5" SATA • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	45K0616	N
21	Hard disk drive, Seagate Pharaoh SATA 6.0Gb/s 250G • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO D1J D2J D5J D6J E1J E2J • MT 1782: CTO E1J E2J G2G F4J F5J C6J C8J C9J H1J F2A F2T F3A F3T • MT 1837: CTO • MT 1962: CTO	03T7039	N
21	Hard disk drive, Seagate Pharaoh SATA 6.0Gb/s 320G • MT 1741: CTO A5G • MT 1761: CTO A7J A8J A9J B3U B3F B3S C6U C6F C6S C7U C7F C7S C1J C2J C3J C4J B2U B2F B2S • MT 1762: CTO D3J D4J D8G • MT 1782: CTO E3J E4J E9G G1V H2U H2S H2F • MT 1837: CTO • MT 1962: CTO	03T7040	N

Item #	FRUs	FRU #	CRU
22	Assembly panel bracket • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9682	N
22	Assembly panel bracket • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9681	N
23	20-inch 1600x900 CCFL panel • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T6429	N
23	20-inch 1600x900 CCFL panel • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T6431	N
24	YEC inverter • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T6434	N

Item #	FRUs	FRU #	CRU
25	Optical drive, SATA slim DVD-ROM • MT 1741: CTO A9J • MT 1761: CTO • MT 1762: CTO D1J D3J D5J E1J E3J • MT 1782: CTO D5J D7J E1J E3J G2G F4J C8J H1J I8J K1J • MT 1837: CTO • MT 1962: CTO	71Y5848	N
25	Optical drive, SATA slim Rambo • MT 1741: CTO A1J A2J A3J A5G A6G A7G A8J B1G B2J B3J B4J • MT 1761: CTO A1U A1F A2U A2F A3U A3F A4J A5J A6J B1U B1F B1S A7J A8J A9J B3U B3F B3S B4U B4F B4S B5U B5S B5F B6U B6F B6S B7U B7S B7F B8U B8S B8F C5U C5S C5F C6U C6F C6S C7U C7F C7S C1J C2J C3J C4J B2U B2F B2S D1J D2J D3J D4J D5J D6J D7U D7F D7S D8U D8F D8S D9U D9S • MT 1762: CTO B3B B3H A5G A6G A7G A8G B2G D2J D4J D6J D8G E2J E4J • MT 1782: CTO D1B A6A A6T A7A A7T A8A A8T A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y C1U C1F C2U C2F C3U C3F C4U C4F B5G B6G B7G B9G A9G C5V C7V D2B D6J D8J E5B E6A E6T E7A E7T E8A E8T E2J E4J E9G G1V G3G G4G G5G G6G F5J H3S H3Y H4S H4Y H2U H2S H2F C6J C9J F2A F2T F3A F3T I1S I1D I1SY I2S I2D I2Y I3S I3D I3Y I4S I4D I4Y I5S I5D I5Y I6S I6D I6Y IS I7D I7Y I9J K2J • MT 1837: CTO A1G • MT 1962: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	45K0433	N
27	Assembly camera kit • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9690	N
27	Assembly non Camera kit • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9691	N

Mechanical FRUs

The FRUs listed in the following tables are not illustrated.

FRUs	FRU #	CRU
Cables • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9643	N
Card reader bezel • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9645	N
Card reader blank bezel • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9646	N
Hard disk drive bracket kit • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9653	N
Assembly front bezel; non-touch • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9668	N

FRUs	FRU #	CRU
Assembly touch panel • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9687	N
Card reader bezel assembly • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9693	N
Non card reader blank bezel • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9694	N
Tap kit for • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9692	N
Assembly front bezel; touch • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9669	N

FRUs	FRU #	CRU
Assembly panel bracket Chimei, non-touch • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T9701	N
Intrusion switch cable • MT 1741: all models • MT 1761: all models • MT 1762: all models • MT 1782: all models • MT 1837: all models • MT 1962: all models	03T6423	N

Keyboard and Mouse

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--US English China • MT 1741: CTO • MT 1761: CTO A1U A2U A3U B1U B3U B4U B5U B6U B7U B8U C5U C6U C7U B2U D7U D8U D9U • MT 1762: CTO B3H • MT 1782: CTO A6A A7A C1U C2U C3U C4U E6A E7A E8A H2U F2A F3A • MT 1837: CTO • MT 1962: CTO A1U A1L A1M A1A A1Q A1C A1H A1R A1E	41A5289	1
Slim USB--Arabic • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5290	1
Slim USB--A/F • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41A5291	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--B/F • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5292	1
Slim USB--Belgium English • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5293	1
Slim USB--Brazilian Portuguese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1P	41A5294	1
Slim USB--Bulgarian • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5295	1
Slim USB--Traditional Chinese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO B3B • MT 1782: CTO D1B C5V C7V D2B E5B • MT 1837: CTO • MT 1962: CTO A1B A1V	41A5296	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--Czech (QWERTY or ABB) • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5297	1
Slim USB--Danish • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5298	1
Slim USB--Dutch • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5299	1
Slim USB--French • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5300	1
Slim USB--French Canadian • MT 1741: CTO • MT 1761: CTO A1F A2F A3F B1F B3F B4F B5F B6F B7F B8F C5F C6F C7F D7F D8F D9F • MT 1762: CTO • MT 1782: CTO C1F C2F C3F C4F H2F • MT 1837: CTO • MT 1962: CTO A1F	41A5301	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--French Canadian • MT 1741: CTO • MT 1761: CTO A1F A2F A3F B1F B3F B4F B5F B6F B7F B8F C5F C6F C7F D7F D8F D9F • MT 1762: CTO • MT 1782: CTO C1F C2F C3F C4F H2F • MT 1837: CTO • MT 1962: CTO A1F	41A5302	1
Slim USB--German • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5303	1
Slim USB--Greek • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5304	1
Slim USB--Greek/US • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5305	1
Slim USB--Hebrew • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5306	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--Hungarian • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5307	1
Slim USB--Iceland • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5308	1
Slim USB--Italy • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5309	1
Slim USB--Japanese • MT 1741: CTO A1J A2J A3J A8J A9J B2J B3J B4J • MT 1761: CTO A4J A5J A6J A7J A8J A9J C1J C2J C3J C4J D1J D2J D3J D4J D5J D6J • MT 1762: CTO D1J D2J D3J D4J D5J D6J E1J E2J E3J E4J • MT 1782: CTO D5J D6J D7J D8J E1J E2J E3J E4J F4J F5J C6J C8J C9J H1J I8J I9J K1J K2J • MT 1837: CTO • MT 1962: CTO A1J	41A5310	1
Slim USB--Korean • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1K	41A5311	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--LA Spanish • MT 1741: CTO • MT 1761: CTO B1S B3S B4S B5S B6S B7S B8S C5S C6S C7S B2S D7S D8S D9S • MT 1762: CTO • MT 1782: CTO A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y H3S H3Y H4S H4Y H2S I1S I1D I1Y I2S I2D I2Y I3S I3D I3Y I4S I4D I4Y I5S I5D K5Y K6S I6D I6Y I7S I7D I7Y • MT 1837: CTO • MT 1962: CTO A1S A1D A1Y	41A5312	1
Slim USB--Norwegian • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5313	1
Slim USB--Polish • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5314	1
Slim USB--Portuguese • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5315	1
Slim USB--Romanian • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5316	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--Romanian • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5317	1
Slim USB--Russian/Cyrillic • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5318	1
Slim USB--Serbian/Cyrillic • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5319	1
Slim USB--Slovak • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5320	1
Slim USB--Spanish • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5321	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB--Swedish/Finnish • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5322	1
Slim USB--SF/G • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5323	1
Slim USB--Thailand • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO A6T A7T E6T E7T E8T F2T F3T • MT 1837: CTO • MT 1962: CTO A1T	41A5324	1
Slim USB--Turkish • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5325	1
Slim USB--Turkish • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5326	1

Keyboard (preferred pro fullsize)	FRU #	CRU
Slim USB --UK English • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5327	1
Slim USB--US European • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5328	1
Slim USB--Slovenian • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41A5329	1
Slim USB--Arabic (new) • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	45J4880	1
Slim USB--Lithuanian • MT 1741: CTO A5G A6G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B7G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	45J4896	1
Slim USB--India • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1Q	54Y8381	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--US English China • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0038	1
Fingerprint--Arabic • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0039	1
Fingerprint--A/F • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0040	1
Fingerprint--B/F • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0041	1
Fingerprint--Belgium English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0042	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Brazilian Portuguese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0043	1
Fingerprint--Bulgarian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0044	1
Fingerprint--Traditional Chinese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0045	1
Fingerprint--Czech (QWERTY or ABB) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0046	1
Fingerprint--Danish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0047	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Dutch • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0048	1
Fingerprint--French • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0049	1
Fingerprint--French Canadian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0050	1
Fingerprint--French Canadian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0051	1
Fingerprint--German • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0052	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Greek • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0053	1
Fingerprint--Greek/US • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0054	1
Fingerprint--Hebrew • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0055	1
Fingerprint--Hungarian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0056	1
Fingerprint--Iceland • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0057	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Italy • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0058	1
Fingerprint--Japanese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0059	1
Fingerprint--Korean • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0060	1
Fingerprint--LA Spanish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0061	1
Fingerprint--Norwegian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0062	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Polish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0063	1
Fingerprint--Portuguese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0064	1
Fingerprint--Romanian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0065	1
Fingerprint--Russian/Cyrillic • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0067	1
Fingerprint--Serbian/Cyrillic • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0068	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Slovak • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0069	1
Fingerprint--Spanish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0070	1
Fingerprint--Swedish/Finnish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0071	1
Fingerprint--SF/G • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0072	1
Fingerprint--Thailand • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0073	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Turkish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0074	1
Fingerprint--Turkish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0075	1
Fingerprint --UK English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0076	1
Fingerprint--US European • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0077	1
Fingerprint--Slovenian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	41R0078	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--US English China • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8001	1
Fingerprint--Arabic • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8002	1
Fingerprint--A/F • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8003	1
Fingerprint--B/F • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8004	1
Fingerprint--Belgium English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8005	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Brazilian Portuguese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8006	1
Fingerprint--Bulgarian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8007	1
Fingerprint--Traditional Chinese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8008	1
Fingerprint--Czech (QWERTY or ABB) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8009	1
Fingerprint--Danish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8010	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Dutch • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8011	1
Fingerprint--French • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8012	1
Fingerprint--French Canadian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8013	1
Fingerprint--French Canadian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8014	1
Fingerprint--German • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8015	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Greek • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8016	1
Fingerprint--Greek/US • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8017	1
Fingerprint--Hebrew • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8018	1
Fingerprint--Hungarian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8019	1
Fingerprint--Iceland • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8020	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Italy • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8021	1
Fingerprint--Japanese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8022	1
Fingerprint--Korean • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8023	1
Fingerprint--LA Spanish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8024	1
Fingerprint--Norwegian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8025	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Polish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8026	1
Fingerprint--Portuguese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8027	1
Fingerprint--Romanian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8039	1
Fingerprint--Russian/Cyrillic • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8028	1
Fingerprint--Serbian/Cyrillic • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8040	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Slovak • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8029	1
Fingerprint--Spanish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8030	1
Fingerprint--Swedish/Finnish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8031	1
Fingerprint--SF/G • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8032	1
Fingerprint--Thailand • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8033	1

Keyboard (fingerprint (EPEAT GOLD))	FRU #	CRU
Fingerprint--Turkish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8041	1
Fingerprint--Turkish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8034	1
Fingerprint --UK English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8035	1
Fingerprint--US European • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8036	1
Fingerprint--Slovenian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8037	1

Keyboard (ultraslim wireless)	FRU #	CRU
Ultraslim wireless--US English China • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO A8A • MT 1837: CTO • MT 1962: CTO	57Y4740	1
Ultraslim wireless--Arabic • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4741	1
Ultraslim wireless--A/F • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	57Y4742	1
Ultraslim wireless--B/F • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4743	1
Ultraslim wireless--Belgium English • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4744	1

Keyboard (ultraslim wireless)	FRU #	CRU
Ultraslim wireless--Brazilian Portuguese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	57Y4745	1
Ultraslim wireless--Bulgarian • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4746	1
Ultraslim wireless--Traditional Chinese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	57Y4747	1
Ultraslim wireless--Czech (QWERTY or ABB) • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4748	1
Ultraslim wireless--Danish • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4749	1

Keyboard (ultraslim wireless)	FRU #	CRU
Ultraslim wireless--Dutch • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4750	1
Ultraslim wireless--French • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4751	1
Ultraslim wireless--French Canadian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	57Y4752	1
Ultraslim wireless--French Canadian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	57Y4753	1
Ultraslim wireless--German • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4754	1

Keyboard (ultraslim wireless)	FRU #	CRU
Ultraslim wireless--Greek • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4755	1
Ultraslim wireless--Greek/US • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4756	1
Ultraslim wireless--Hebrew • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4757	1
Ultraslim wireless--Hungarian • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4758	1
Ultraslim wireless--Iceland • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4759	1

Keyboard (ultraslim wireless)	FRU #	CRU
Ultraslim wireless--Italy • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4760	1
Ultraslim wireless--Japanese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	57Y4761	1
Ultraslim wireless--Korean • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	57Y4762	1
Ultraslim wireless--LA Spanish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	57Y4763	1
Ultraslim wireless--Norwegian • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4764	1

Keyboard (ultraslim wireless)	FRU #	CRU
Ultraslim wireless--Polish • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4765	1
Ultraslim wireless--Portuguese • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4766	1
Ultraslim wireless--Russian/Cyrillic • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4767	1
Ultraslim wireless--Slovak • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4768	1
Ultraslim wireless--Spanish • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4769	1

Keyboard (ultraslim wireless)	FRU #	CRU
Ultraslim wireless--Swedish/Finnish • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4770	1
Ultraslim wireless--SF/G • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4771	1
Ultraslim wireless--Thailand • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO A8T • MT 1837: CTO • MT 1962: CTO	57Y4772	1
Ultraslim wireless--Turkish • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4773	1
Ultraslim wireless --UK English • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4774	1

Keyboard (ultraslim wireless)	FRU #	CRU
Ultraslim wireless--US European • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4775	1
Ultraslim wireless--Slovenian • MT 1741: CTO A7G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO B5G B6G B9G • MT 1837: CTO • MT 1962: CTO	57Y4776	1
Ultraslim wireless--India • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03X8239	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB- US English • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9293	1
Slim new F5 USB- Arabic • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9294	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB- Arabic/French • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9295	1
Slim new F5 USB- Belgium/French • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9296	1
Slim new F5 USB- Belgium/English • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9297	1
Slim new F5 USB- Brazil/Portuguese • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9298	1
Slim new F5 USB- Bulgarian • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9299	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB- Traditional Chinese • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9300	1
Slim new F5 USB- Czech (QWERTY or ABB) • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9301	1
Slim new F5 USB- Danish • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9302	1
Slim new F5 USB- Dutch • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9303	1
Slim new F5 USB- French • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9304	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB- French Canadian • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9305	1
Slim new F5 USB- French Canadian • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9306	1
Slim new F5 USB- German • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9307	1
Slim new F5 USB- Greek • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9308	1
Slim new F5 USB- Greek/US • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9309	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB- Hebrew • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9310	1
Slim new F5 USB- Hungarian • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9311	1
Slim new F5 USB- Iceland • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9312	1
Slim new F5 USB- Italy • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9313	1
Slim new F5 USB- Japanese • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9314	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB- Korean • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9315	1
Slim new F5 USB- LA Spanish • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9316	1
Slim new F5 USB- Norwegian • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9317	1
Slim new F5 USB- Polish • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9318	1
Slim new F5 USB- Portuguese • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9319	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB- Romanian • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9320	1
Slim new F5 USB- Russian/Cyrillic • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9321	1
Slim new F5 USB- Serbian/Cyrillic • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9322	1
Slim new F5 USB- Slovak • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9323	1
Slim new F5 USB- Spanish • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9324	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB- Swedish/Finn • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9325	1
Slim new F5 USB- Swiss, F/G • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9326	1
Slim new F5 USB- Thailand • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9327	1
Slim new F5 USB- Turkish • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9328	1
Slim new F5 USB- Turkish • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9329	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB- UK English • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9330	1
Slim new F5 USB- US European • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9331	1
Slim new F5 USB-Slovenian • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9332	1
Slim new F5 USB- Arabic (new) • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9333	1
Slim new F5 USB- Lithuanian • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9334	1

Keyboard (Lenovo slim new F5 USB)	FRU #	CRU
Slim new F5 USB- Estonia • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9335	1
Slim new F5 USB- India • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	54Y9293	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- US English • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8201	1
Ultraslim plus KB/MS- Arabic • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8202	1
Ultraslim plus KB/MS- Arabic/French • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8203	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- Belgium/French • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8204	1
Ultraslim plus KB/MS- Belgium/English • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8205	1
Ultraslim plus KB/MS- Brazil/Portuguese • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8206	1
Ultraslim plus KB/MS- Bulgarian • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8207	1
Ultraslim plus KB/MS- Traditional Chinese • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8208	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- Czech (QWERTY or ABB) • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8209	1
Ultraslim plus KB/MS- Danish • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8210	1
Ultraslim plus KB/MS- Dutch • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8211	1
Ultraslim plus KB/MS- French • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8212	1
Ultraslim plus KB/MS- French Canadian • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8214	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- French Canadian • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8213	1
Ultraslim plus KB/MS- German • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8215	1
Ultraslim plus KB/MS- Greek • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8216	1
Ultraslim plus KB/MS- Greek/US • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8217	1
Ultraslim plus KB/MS- Hebrew • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8218	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- Hungarian • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8219	1
Ultraslim plus KB/MS- Iceland • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8220	1
Ultraslim plus KB/MS- Italy • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8221	1
Ultraslim plus KB/MS- Japanese • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8222	1
Ultraslim plus KB/MS- Korean • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8223	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- LA Spanish • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8224	1
Ultraslim plus KB/MS- Norwegian • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8225	1
Ultraslim plus KB/MS- Polish • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8226	1
Ultraslim plus KB/MS- Portuguese • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8227	1
Ultraslim plus KB/MS- Russian/Cy • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8228	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- Slovak • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8229	1
Ultraslim plus KB/MS- Spanish • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8230	1
Ultraslim plus KB/MS- Swedish/Finnish • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8231	1
Ultraslim plus KB/MS- Swiss, F/G • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8232	1
Ultraslim plus KB/MS- Thailand • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8233	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- Turkish • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8234	1
Ultraslim plus KB/MS- UK English • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8235	1
Ultraslim plus KB/MS- US European • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8236	1
Ultraslim plus KB/MS- Slovenian • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8237	1
Ultraslim plus KB/MS- LA Spanish (without battery) • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8224	1

Keyboard (ultraslim plus KB/MS-)	FRU #	CRU
Ultraslim plus KB/MS- Brazil/Portuguese (without battery) • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8206	1
Ultraslim plus KB/MS- Nodic • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	0A34324	1
Ultraslim plus KB/MS- India • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	03X8239	1

Mice	FRU #	CRU
Lenovo enhanced optical USB mouse • MT 1741: CTO A1J A2J A3J A5G A6G A8J A9J B1G B2J B33J B4J • MT 1761: CTO A1U A1F A2U A2F A3U A3F A4J A5J A6J B1U B1F B1S A7J A8J A9J B3U B3F B3S B4U B4F B4S B5U B5S B5F B6U B6F B6S B7U B7S B7F B8U B8S B8F C5U C5S C5F C6U C6F C6S C7U C7F C7S C1J C2J C3J C4J B2U B2F B2S D1J D2J D3J D4J D5J D6J D7U D7F D7S D8U D8F D8S D9U D9F D9S • MT 1762: CTO B3B B3H A5G A6G A7G A8G B2G D1J D2J D3J D4J D5J D6J D8G E1J E2J E3J E4J • MT 1782: CTO D1B A6A A6T A7A A7T A1S A1D A1Y A2S A2D A2Y A3S A3D A3Y A4S A4D A4Y A5S A5D A5Y C1U C1F C2U C2F C3U C3F C4U C4F B7G A9G C5V C7V D2B D5J D6J D7J D8J E5B E6A E6T E7A E7T E8A E8T E1J E2J E3J E4J E9G G1V G2G G3G G4G G5G G6G F4J F5J H3S H3Y H4S H4Y H2U H2S H2F C6J C8J C9J H1J F2A F2T F3A F3T I1S I1D I1Y I2S I2D I2Y I3S I3D I3Y I4S I4D I4Y I5S I5D I5Y I6S I6D I6Y I7S I7D I7Y I8J I9J K1J K2J • MT 1837: CTO A1G • MT 1962: CTO A1U A1F A1S A1P A1L A1D A1Y A1G A1M A1A A1Q A1T A1C A1B A1H A1V A1K A1R A1E A1J	45J4889	1

Adapters and miscellaneous FRUs

Adapters and miscellaneous FRUs	FRU #	CRU
BCM BCM43227 2x2 MC • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T9015	N
DP to DVI dongle 200mm • MT 1741: CTO • MT 1761: CTO A4J A5J A6J • MT 1762: CTO D1J D2J D3J D4J • MT 1782: CTO D5J D6J D7J D8J E1J E2J E3J E4J • MT 1837: CTO • MT 1962: CTO	43N9160	N
Intel-6205N wireless Tylar Peak • MT 1741: • MT 1761: • MT 1762: • MT 1782: • MT 1837: • MT 1962:	60Y3253	N

Power Cords

Power Cords --primary	FRU #	CRU
Line Cord-US/ Canada/ Barbados/ Belize / Bolivia/ Costa Rica/ Columbia/ Dominican Republic/ Ecuador/ ElSalvador/ Guatemala/ Haiti/ Honduras/ Jamaica/ Mexico/ Netherlands Antilles/ Nicaragua/ Panama/ Philippines/ Peru/Trinidad & Tobago/ Venezuela/ (Thainland) • MT 1741: CTO • MT 1761: CTO A1U A1F A2U A2F A3U A3F B1U B1F B1S B3U B3F B3S B4U B4F B4S B5U B5S B5F B6U B6F B6S B7U B7S B7F B8U B8S B8F C5U C5S C5F C6U C6F C6S C7U C7F C7S B2U B2F B2S D7U D7F D7S D8U D8F D8S D9U D9F D9S • MT 1762: CTO • MT 1782: CTO A6A A6T A7A A7T A8A A8T A1S A1D A2S A2D A3S A3D A4S A4D A5S A5D C1U C1F C2U C2F C3U C3F C4U C4F E6A E6T E7A E7T E8A E8T H3S H4S H2U H2S H2F F2A F2T F3A F3T I1S I1D I2S I2D I3S I3D I4S I4D I5S I5D I6S I6D I7S I7D • MT 1837: CTO • MT 1962: CTO A1U A1F A1S A1D A1L A1A A1T	41R3184	1
Line Cord - China • MT 1741: CTO	41R3256	1

Power Cords --primary	FRU #	CRU
• MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1C		
Line Cord - Japan • MT 1741: CTO A1J A2J A3J A8J A9J B2J B3J B4J • MT 1761: CTO A4J A5J A6J A7J A8J A9J C1J C2J C3J C4J D1J D2J D3J D4J D5J D6J • MT 1762: CTO D1J D2J D3J D4J D5J D6J E1J E2J E3J E4J • MT 1782: CTO D5J D6J D7J D8J E1J E2J E3J E4J F4J F5J C6J C8J C9J H1J I8J I9J K1J K2J • MT 1837: CTO • MT 1962: CTO A1E A1J	41R3248	1
Line Cord - Brazil • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1P	45J9595	1
Line Cord - LA (High Voltage) Argentina, Paraguay, Uruguay • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO A1Y A2Y A3Y A4Y A5Y H3Y H4Y I1Y I2Y I3Y I4Y I5Y I6Y I7Y • MT 1837: CTO • MT 1962: CTO A1Y A1L	41R3176	1
Line Cord - ANZ. Australia/New Zealand • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1M	41R3196	1
Line Cord - Korea • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1K A1R	41R3260	1

Power Cords --primary	FRU #	CRU
Line Cord - UK/ Hong Kong/ Singapore/ Malaysia/ Bahrain/ Botswana/ Burma/ Brunei / Cyprus/ Ghana/ Ireland/ Jordan/ Kenya/ Kuwait/ Malta/ Nigeria/ Oman/ Qatar/ United Arab Emirates/ Trinidad and Tobago/ Saudi Arabia • MT 1741: CTO A5G A6G A7G B1G • MT 1761: CTO • MT 1762: CTO B3B B3H A5G A6G A7G A8G B2G D8G • MT 1782: CTO D1B A6A A7A A8A B5G B6G B7G B9G A9G D2B E5B E6A E7A E8A E9G F2A F3A • MT 1837: CTO A1G • MT 1962: CTO A1G A1A A1B A1H	41R3224	1
Line Cord - Taiwan • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO C5V C7V • MT 1837: CTO • MT 1962: CTO A1V	41R3278	1
Line Cord - Italy/ Chile/Libya • MT 1741: CTO A5G A6G A7G B1G • MT 1761: CTO B1S B3S B4S B5S B6S B7S B8S C5S C6S C7S B2S • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO A1S A1Y A2S A2Y A3S A3Y A4S A4Y A5S A5Y B5G B6G B7G B9G A9G E9G H3S H3Y H4S H4Y I1Y I2Y I3Y I4Y I5Y I6Y I7Y • MT 1837: CTO A1G • MT 1962: CTO A1Y A1L A1G	41R3232	1
Line Cord - Denmark • MT 1741: CTO A5G A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B5G B6G B7G B9G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41R3212	1
Line Cord - Switzerland, Liechtenstein • MT 1741: CTO A5G A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B5G B6G B7G B9G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41R3228	1

Power Cords --primary	FRU #	CRU
Line Cord - Israel • MT 1741: CTO A5G A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B5G B6G B7G B9G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41R3236	1
Line Cord - South Africa/ Bangladesh / Namibia/ Nepal/ Pakistan/ Sri Lanka./ Swaziland / Uganda • MT 1741: CTO A5G A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO A6A A7A A8A B5G B6G B7G B9G A9G E6A E7A E8A E9G F2A F3A • MT 1837: CTO A1G • MT 1962: CTO A1G A1M A1A	41R3220	1
Line Cord - India • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1Q	41R3341	1
Line Cord - Albania/ Algeria/ Angola/ Austria / Belarus/ Belgium/ Bosnia/ Bulgaria/ Croatia/ Cambodia/ Cote d'ivoire/ Czech/ Estonia/ Egypt/ Finland/ France/ Georgia/ Germany/ Greece/ Herzegovina/ Hungary/ Indonesia/ Iceland/ Kazakhstan/ Kyrgyzstan / Laos/ Latvia/ Lebanon/ Lithuania/ Luxembourg/ Macao/ Macedonia/ Mauritius/ Moldova/ Morocco/ Netherlands/ Norway/ Poland/ Portugal/ Romania/ Spain/ Sweden/ Serbia/ Slovakia/ Slovenia/ Vietnam/ Tadzhikistan/ Turkmenistan/ Turkey/ Tunisia/ Paraguay/ Russia/ Ukraine/ Uzbekistan/ Vietnam • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO A6A A7A A8A E6A E7A E8A F2A F3A • MT 1837: CTO • MT 1962: CTO A1A	41R3208	1

Power Cords --secondary	FRU #	CRU
Line Cord-US/ Canada/ Barbados/ Belize / Bolivia/ Costa Rica/ Columbia/ Dominican Republic/ Ecuador/ ElSalvador/ Guatemala/ Haiti/ Honduras/ Jamaica/ Mexico/ Netherlands Antilles/ Nicaragua/ Panama/ Philippines/ Peru/Trinidad & Tobago/ Venezuela/ (Thainland) • MT 1741: CTO • MT 1761: CTO A1U A1F A2U A2F A3U A3F B1U B1F B1S B3U B3F B3S B4U B4F B4S B5U B5S B5F B6U B6F B6S B7U B7S B7F B8U B8S B8F C5U C5S C5F C6U C6F C6S C7U C7F C7S B2U B2F B2S D7U D7F D7S D8U D8F D8S D9U D9F D9S • MT 1762: CTO • MT 1782: CTO A6A A6T A7A A7T A8A A8T A1S A1D A2S A2D A3S A3D A4S A4D A5S A5D C1U C1F C2U C2F C3U C3F C4U C4F E6A E6T E7A E7T E8A E8T H3S H4S H2U H2S H2F F2A F2T F3A F3T I1S I1D I2S I2D I3S I3D I4S I4D I5S I5D I6S I6D I7S I7D • MT 1837: CTO • MT 1962: CTO A1U A1F A1S A1D A1L A1A A1T	41R3185	1
Line Cord - China • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1C	41R3257	1
Line Cord - Japan • MT 1741: CTO A1J A2J A3J A8J A9J B2J B3J B4J • MT 1761: CTO A4J A5J A6J A7J A8J A9J C1J C2J C3J C4J D1J D2J D3J D4J D5J D6J • MT 1762: CTO D1J D2J D3J D4J D5J D6J E1J E2J E3J E4J • MT 1782: CTO D5J D6J D7J D8J E1J E2J E3J E4J F4J F5J C6J C8J C9J H1J I8J I9J K1J K2J • MT 1837: CTO • MT 1962: CTO A1E A1J	41R3249	1
Line Cord - Brazil • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1P	41R3271	1

Power Cords --secondary	FRU #	CRU
Line Cord - LA (High Voltage) Argentina, Paraguay, Uruguay • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO A1Y A2Y A3Y A4Y A5Y H3Y H4Y I1Y I2Y I3Y I4Y I5Y I6Y I7Y • MT 1837: CTO • MT 1962: CTO A1Y A1L	41R3177	1
Line Cord - ANZ. Australia/New Zealand • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1M	41R3197	1
Line Cord - Korea • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1K A1R	41R3261	1
Line Cord - UK/ Hong Kong/ Singapore/ Malaysia/ Bahrain/ Botswana/ Burma/ Brunei / Cyprus/ Ghana/ Ireland/ Jordan/ Kenya/ Kuwait/ Malta/ Nigeria/ Oman/ Qatar/ United Arab Emirates/ Trinidad and Tobago/ Saudi Arabia • MT 1741: CTO A5G A6G A7G B1G • MT 1761: CTO • MT 1762: CTO B3B B3H A5G A6G A7G A8G B2G D8G • MT 1782: CTO D1B A6A A7A A8A B5G B6G B7G B9G A9G D2B E5B E6A E7A E8A E9G F2A F3A • MT 1837: CTO A1G • MT 1962: CTO A1G A1A A1B A1H	41R3225	1
Line Cord - Taiwan • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO C5V C7V • MT 1837: CTO • MT 1962: CTO A1V	41R3279	1

Power Cords --secondary	FRU #	CRU
Line Cord - Italy/ Chile/Libya • MT 1741: CTO A5G A6G A7G B1G • MT 1761: CTO B1S B3S B4S B5S B6S B7S B8S C5S C6S C7S B2S • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO A1S A1Y A2S A2Y A3S A3Y A4S A4Y A5S A5Y B5G B6G B7G B9G A9G E9G H3S H3Y H4S H4Y I1Y I2Y I3Y I4Y I5Y I6Y I7Y • MT 1837: CTO A1G • MT 1962: CTO A1Y A1L A1G	41R3233	1
Line Cord - Denmark • MT 1741: CTO A5G A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B5G B6G B7G B9G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41R3213	1
Line Cord - Switzerland, Liechtenstein • MT 1741: CTO A5G A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B5G B6G B7G B9G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41R3229	1
Line Cord - Israel • MT 1741: CTO A5G A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO B5G B6G B7G B9G A9G E9G G2G G3G G4G G5G G6G • MT 1837: CTO A1G • MT 1962: CTO A1G	41R3237	1
Line Cord - South Africa/ Bangladesh / Namibia/ Nepal/ Pakistan/ Sri Lanka./ Swaziland / Uganda • MT 1741: CTO A5G A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A5G A6G A7G A8G B2G D8G • MT 1782: CTO A6A A7A A8A B5G B6G B7G B9G A9G E6A E7A E8A E9G F2A F3A • MT 1837: CTO A1G • MT 1962: CTO A1G A1M A1A	41R3221	1

Power Cords --secondary	FRU #	CRU
Line Cord - India • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1Q	41R3175	1
Line Cord - Albania/ Algeria/ Angola/ Austria / Belarus/ Belgium/ Bosnia/ Bulgaria/ Croatia/ Cambodia/ Cote d'ivoire/ Czech/ Estonia/ Egypt/ Finland/ France/ Georgia/ Germany/ Greece/ Herzegovina/ Hungary/ Indonesia/ Iceland/ Kazakhstan/ Kyrgyzstan / Laos/ Latvia/ Lebanon/ Lithuania/ Luxembourg/ Macao/ Macedonia/ Mauritius/ Moldova/ Morocco/ Netherlands/ Norway/ Poland/ Portugal/ Romania/ Spain/ Sweden/ Serbia/ Slovakia/ Slovenia/ Vietnam/ Tadzhikistan/ Turkmenistan/ Turkey/ Tunisia/ Paraguay/ Russia/ Ukraine/ Uzbekistan/ Vietnam • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO A6A A7A A8A E6A E7A E8A F2A F3A • MT 1837: CTO • MT 1962: CTO A1A	41R3209	1

Recovery discs

Windows 7 Starter SP1 Recovery CD

Windows 7 Starter SP1 Recovery CD	FRU #	CRU
US English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2732	1
Spanish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2730	1

Windows 7 Starter SP1 Recovery CD	FRU #	CRU
Arabic/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2724	1
Russian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2729	1
Turkish/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2731	1
Brazilian Portuguese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2725	1
India English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2726	1

Windows 7 Starter SP1 Recovery CD	FRU #	CRU
French • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2727	1
Portuguese/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2728	1

Windows 7 Home Basic 32 SP1 Recovery CD

Windows 7 Home Basic 32 SP1 Recovery CD	FRU #	CRU
US English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2742	1
Spanish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2739	1
Arabic/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2733	1

Windows 7 Home Basic 32 SP1 Recovery CD	FRU #	CRU
Russian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2738	1
Turkish/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2741	1
Serbian-Latin/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2740	1
Brazilian Portuguese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2734	1
India English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2735	1

Windows 7 Home Basic 32 SP1 Recovery CD	FRU #	CRU
French • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2736	1
Portuguese/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2737	1

Windows 7 Home Premium 32 SP1 Recovery CD

Windows 7 Home Premium 32 SP1 Recovery CD	FRU #	CRU
US English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2755	1
Chinese-Traditional (Taiwan) / English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2744	1
Russian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2753	1

Windows 7 Home Premium 32 SP1 Recovery CD	FRU #	CRU
Korean/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2751	
Arabic/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2743	1
India English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2745	1
French • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2746	1
German • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2747	1

Windows 7 Home Premium 32 SP1 Recovery CD	FRU #	CRU
Hebrew/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2748	1
Italian/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2749	1
Japanese/English • MT 1741: CTO A8J • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2750	1
Portuguese/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2752	1
Spanish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2754	1

Windows 7 Home Premium 32 SP1 Recovery CD	FRU #	CRU
C&L Nordics (DK/FI/SV/NO/EN) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2756	1
C&L EMEA (NL/FR/GR/IT/EN) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2757	1
C&L Hong Kong (HK CS EN) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2758	1

Windows 7 Home Premium 64 SP1 Recovery CD

Windows 7 Home Premium 64 SP1 Recovery CD	FRU #	CRU
US English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2792	1
Chinese-traditional/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2788	1

Windows 7 Home Premium 64 SP1 Recovery CD	FRU #	CRU
India English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2789	1
French • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2790	1
Korean/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2791	1
C&L Hong Kong (HK CS EN) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2793	1

Windows 7 Professional 32 SP1 Recovery CD

Windows 7 Professional 32 SP1 Recovery CD	FRU #	CRU
US English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO A6A A6T A7A A7T A8A A8T C1U C2U C3U C4U A9G E8A E8T E9G F2A F2T F3A F3T • MT 1837: CTO • MT 1962: CTO	03T2781	1
Spanish • MT 1741: CTO A5G • MT 1761: CTO	03T2778	1

Windows 7 Professional 32 SP1 Recovery CD	FRU #	CRU
• MT 1762: CTO • MT 1782: CTO A9G E9G • MT 1837: CTO • MT 1962: CTO		
Chinese-Simplified • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2761	1
Chinese-Traditional (Taiwan) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO C5V C7V • MT 1837: CTO • MT 1962: CTO	03T2762	1
Russian • MT 1741: CTO A5G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO A9G E9G • MT 1837: CTO • MT 1962: CTO	03T2776	1
Korean/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2772	1
Arabic/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2759	1

Windows 7 Professional 32 SP1 Recovery CD	FRU #	CRU
Brazilian Portuguese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2760	1
Czech • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2763	1
French • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2765	1
Greek • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2766	1
India English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2764	1

Windows 7 Professional 32 SP1 Recovery CD	FRU #	CRU
Hungarian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2769	1
Polish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2773	1
German • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2767	1
Portuguese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2774	1
Romanian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2775	1

Windows 7 Professional 32 SP1 Recovery CD	FRU #	CRU
Italian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2770	1
Slovakian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2777	1
Turkish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2780	1
Japanese • MT 1741: CTO A9J B2J B3J B4J • MT 1761: CTO C1J C2J C3J C4J D1J D2J D3J D4J D5J D6J • MT 1762: CTO D5J D6J E1J E2J E3J E4J • MT 1782: CTO F4J F5J C6J C8J C9J H1J I8J I9J K1J K2J • MT 1837: CTO • MT 1962: CTO	03T2771	1
C&L Nordics (DK/FI/SV/NO/EN) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2782	1

Windows 7 Professional 32 SP1 Recovery CD	FRU #	CRU
C&L EMEA (NL/FR/GR/IT/EN) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2783	1
C&L Hong Kong (HK CS EN) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2785	1
C&L Croatian (EN/SL/CR) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2784	1
Hebrew • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2768	1
Serbian-Latin/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2779	1

Windows 7 Professional 64 SP1 Recovery CD

Windows 7 Professional 64 SP1 Recovery CD	FRU #	CRU
US English • MT 1741: CTO B1G • MT 1761: CTO A1U A2U A3U B1U B3U B4U B5U B6U B7U B8U C5U C6U C7U B2U D7U D8U D9U • MT 1762: CTO B3H A7G A8G B2G • MT 1782: CTO B5G B6G B7G B9G G3G G4G G5G H2U • MT 1837: CTO A1G • MT 1962: CTO A1U A1L A1G A1M A1A A1Q A1T A1H A1R A1E	03T2816	1
Arabic/English • MT 1741: CTO A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A7G A8G B2G • MT 1782: CTO B5G B6G B7G B9G G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2794	1
Chinese-Traditional (Taiwan) / English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1V	03T2797	1
Russian • MT 1741: CTO A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A7G A8G B2G • MT 1782: CTO B5G B6G B7G B9G G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2811	1
Polish • MT 1741: CTO A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A7G A8G B2G • MT 1782: CTO B5G B6G B7G B9G G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2808	1

Windows 7 Professional 64 SP1 Recovery CD	FRU #	CRU
Korean • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1K	03T2807	1
Hebrew/English • MT 1741: CTO A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A7G A8G B2G • MT 1782: CTO B5G B6G B7G B9G G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2803	1
Greek/English • MT 1741: CTO A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A7G A8G B2G • MT 1782: CTO B5G B6G B7G B9G G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2801	1
Turkish/English • MT 1741: CTO A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A7G A8G B2G • MT 1782: CTO B5G B6G B7G B9G G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2815	1
Croatian/Slovenian • MT 1741: CTO A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A7G A8G B2G • MT 1782: CTO B5G B6G B7G B9G G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2820	1

Windows 7 Professional 64 SP1 Recovery CD	FRU #	CRU
Romanian/English • MT 1741: CTO A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A7G A8G B2G • MT 1782: CTO B5G B6G B7G B9G G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2810	1
Hungarian/English • MT 1741: CTO A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A7G A8G B2G • MT 1782: CTO B5G B6G B7G B9G G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2804	1
Czech/English • MT 1741: CTO A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A7G A8G B2G • MT 1782: CTO B5G B6G B7G B9G G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2798	1
Slovakian/English • MT 1741: CTO A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A7G A8G B2G • MT 1782: CTO B5G B6G B7G B9G G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2812	1
Portuguese/English • MT 1741: CTO A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A7G A8G B2G • MT 1782: CTO B5G B6G B7G B9G G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2809	1

Windows 7 Professional 64 SP1 Recovery CD	FRU #	CRU
Serbian-Latin/English • MT 1741: CTO A6G A7G B1G • MT 1761: CTO • MT 1762: CTO A7G A8G B2G • MT 1782: CTO G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2814	1
Brazilian Portuguese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1P	03T2795	1
Simplified Chinese • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1C	03T2796	1
India English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1Q	03T2799	1
Italian/English • MT 1741: CTO B1G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2805	1

Windows 7 Professional 64 SP1 Recovery CD	FRU #	CRU
Japanese/English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1J	03T2806	1
French • MT 1741: CTO B1G • MT 1761: CTO B3F B4F B5F B6F B7F B8F C5F C6F C7F B2F D7F D8F D9F • MT 1762: CTO • MT 1782: CTO G3G G4G G5G H2F • MT 1837: CTO A1G • MT 1962: CTO A1F	03T2800	1
C&L Nordics (DK/FI/SV/NO/EN) • MT 1741: CTO B1G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2817	1
German • MT 1741: CTO B1G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2802	1
C&L EMEA (NL/FR/GR/IT/EN) • MT 1741: CTO B1G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2818	1

Windows 7 Professional 64 SP1 Recovery CD	FRU #	CRU
C&L Hong Kong (HK CS EN) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO A1B	03T2819	1
C&L Croatian (EN/SL/CR) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2820	1
Spanish • MT 1741: CTO B1G • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO G3G G4G G5G • MT 1837: CTO A1G • MT 1962: CTO A1G	03T2813	1

Windows 7 Ultimate 32 SP1 Recovery CD

Windows 7 Ultimate 32 SP1 Recovery CD	FRU #	CRU
US English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2786	1
India English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2787	1

Windows 7 Ultimate 64 SP1 Recovery CD

Windows 7 Ultimate 64 SP1 Recovery CD	FRU #	CRU
US English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2822	1
India English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03T2821	1

Windows XP Professional 32 Recovery CD

Note: The Windows XP Professional recovery DVDs are available only for models with a valid Microsoft Windows XP Professional certificate of authenticity (COA) affixed to the system. Due to a Microsoft licensing limitation, if a model came with Windows XP Professional preinstalled from the factory, but has either a Windows 7 or Windows Vista COA affixed to the system, that model is eligible only for recovery DVDs that match the operating system specified on the COA.

Windows XP Professional 32 Recovery CD	FRU #	CRU
US English • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03W7498	1
Chinese-Traditional (Hong Kong) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03W7485	1

Windows XP Professional 32 Recovery CD	FRU #	CRU
Chinese-Traditional (Taiwan) • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03W7478	1
Russian • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03W7494	1
Polish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03W7492	1
Turkish • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03W7497	1
Czech • MT 1741: CTO • MT 1761: CTO • MT 1762: CTO • MT 1782: CTO • MT 1837: CTO • MT 1962: CTO	03W7479	1

Chapter 10. Additional Service Information

This chapter provides additional information that the service representative might find helpful.

Security features

Security features in this section include the following:

- Passwords
- Vital Product Data
- Management Information Format (MIF)

Hardware controlled Passwords

Hardware controlled passwords are set using the Setup Utility program. For more information about passwords, see “Using passwords” on page 57.

Operating system password

An operating system password is very similar to a power-on password and denies access to the computer by an unauthorized user when the password is activated. The computer is unusable until the password is entered and recognized by the computer.

Vital product data

Each computer has a unique Vital Product Data (VPD) code stored in the nonvolatile memory on the system board. After you replace the system board, the VPD must be updated. To update the VPD, see “Flash update procedures” on page 313.

BIOS levels

An incorrect level of BIOS can cause false errors and unnecessary FRU replacement. Use the following information to determine the current level of BIOS installed in the computer, the latest BIOS available for the computer, and where to obtain the latest level of BIOS.

- To determine the current Level of BIOS:
  - Start the Setup Utility.
  - Select Standard CMOS Features.
- Sources for obtaining the latest level BIOS available
  1. Lenovo support web site: `http://www.lenovo.com/support/`
  2. Lenovo Customer Support Center
  3. Levels 1 and 2 Support

To update (flash) the BIOS, see “Flash update procedures” on page 313.

Flash update procedures

This section details how to flash (update) the BIOS.

Updating (flashing) the BIOS from a disc

This section provides instructions on how to update (flash) the BIOS from a disc.

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Note: You can download a self-starting bootable disc image (known as an ISO image) with the system program updates to create a system-program-update disc. Go to:
http://www.lenovo.com/support

To update (flash) the BIOS from a disc, do the following:

1. Turn off your computer.
2. Repeatedly press and release the F12 key when turning on the computer. When the Startup Device Menu window opens, release the F12 key.
3. On the Startup Device Menu window, select the desired optical drive as the startup device. Then, insert the disc into this optical drive and press Enter. The update begins.
4. When prompted to change the serial number, it is suggested that you do not make this change by pressing N. However, if you do want to change the serial number, press Y, then type in the serial number and press Enter.
5. When prompted to change the machine type and model, it is suggested that you do not make this change by pressing N. However, if you do want to change the machine type and model, press Y, then type in the machine type and model and press Enter.
6. Follow the instructions on the screen to complete the update. After the update is completed, remove the disc from the optical drive.

Updating (flashing) the BIOS from your operating system

Note: Because Lenovo makes constant improvements to its Web sites, the Web page contents are subject to change without notice, including the contents referenced in the following procedure.

To update (flash) the BIOS from your operating system, do the following:

1. Go to
   http://www.lenovo.com/support.
2. Do the following to locate the downloadable files for your machine type:
   a. In the **Enter a product number** field, type your machine type and click **Go**.
   b. Click **Downloads and drivers**.
   c. Select **BIOS** from the **Refine results** drop-down list box to easily locate all the BIOS related links.
   d. Click the BIOS update link.
3. Click the TXT file that contains the instructions for updating (flashing) the BIOS from your operating system.
4. Print these instructions. This is very important because these instructions will not be displayed on the screen after the download begins.
5. Follow the printed instructions to download, extract, and install the update.

Recovering from a POST/BIOS update failure

If the power to your computer is interrupted while the POST/BIOS is being updated (flash update), your computer might not restart correctly. If this happens, perform the following procedure commonly called Boot-block Recovery.

1. Remove all media from the drives and turn off all attached devices and the computer. Then, disconnect all power cords from electrical outlets and disconnect all cables that are connected to the computer.
2. Remove the computer cover. See “Removing the computer cover” on page 94.
3. Locate the Clear CMOS /Recovery jumper on the system board. See “System board parts and connectors” on page 88.

4. Move the jumper from the standard position (pin 1 and pin 2) to the maintenance position (pin 2 and pin 3).
5. Install the computer cover and reconnect all cables and power cords that were disconnected. See “Completing the parts replacement” on page 124.
6. Repeatedly press and release the F12 key when turning on the computer. When the **Startup Device Menu** opens, release the F12 key.
7. Insert the POST/BIOS update (flash) disc into the optical drive. Then, select the optical drive as the startup device and press Enter. The recovery session begins.

   Note: The recovery session will take two to three minutes. During this time you will hear a series of beeps.
8. After the recovery session is completed, the series of beeps will end, and the system will automatically turn off. Remove the disc from the optical drive before the system completely turns off.
9. Repeat steps 1 through 3.
10. Move the Clear CMOS /Recovery jumper back to the standard position (pin 1 and pin 2).
11. Install the computer cover and reconnect all cables and power cords that were disconnected. See “Completing the parts replacement” on page 124.
12. Turn on the computer to restart the operating system.

Power management

Power management reduces the power consumption of certain components of the computer such as the system power supply, processor, hard disk drives, and some monitors.

Automatic configuration and power interface (ACPI) BIOS

Being an ACPI BIOS system, the operating system is allowed to control the power management features of the computer and the setting for Advanced Power Management (APM) BIOS mode is ignored. Not all operating systems support ACPI BIOS mode.

Automatic Power-On features

The Automatic Power-On features within the Power Management menu allow you to enable and disable features that turn on the computer automatically.

- **Wake Up on Alarm**: You can specify a date and time at which the computer will be turned on automatically. This can be either a single event or a daily event.
- **Wake on LAN**: If the computer has a properly configured token-ring or Ethernet LAN adapter card that is Wake on LAN-enabled and there is remote network management software, you can use the Wake on LAN feature. When you set Wake on LAN to **Enabled**, the computer will turn on when it receives a specific signal from another computer on the local area network (LAN).

Appendix A. Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area. Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service.

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